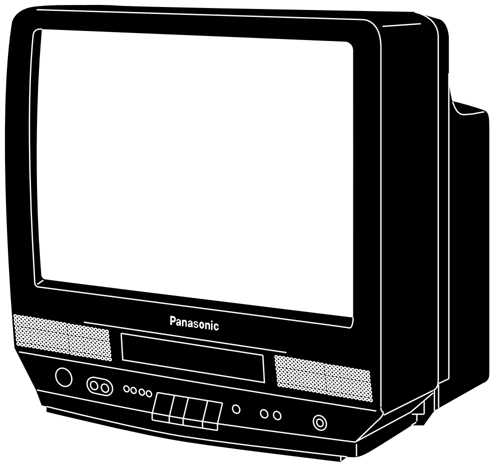
ORDER NO. MKS9801M321
B3, B6

Service Manual

Combination-VCR

Omnivision VHS



- P PV-M1348
- P PV-M1358W
- Q VV1308
- Q VV1318W
- P PV-M1368
- P PV-M1378W
- P PV-M2038
- P PV-M2048
- Q VV2008
- Q VV2018W
- P PV-M2058

SPECIFICATIONS

ITEM		SPECIFICATION	1	2	3	4	5	6
VCR	Video	Head: 2 rotary heads helical scanning system	○	○	-	○	○	-
		4 rotary heads helical scanning system	-	-	○	-	-	○
		Input Level: VIDEO IN Jack (Phono type) 1.0 Vp-p 75Ω unbalanced Signal-to-Noise Ratio: SP: more than 43 dB LP/SLP: more than 41 dB Horizontal Resolution: Color/Monochrome: more than 230 lines	○	○	○	○	○	○
	Audio	Head: Normal Mono: 1 stationary head	○	○	○	○	○	○
		Input Level: AUDIO IN Jack (Phono type) -10 dBv 50kΩ unbalanced	○	○	○	○	○	○
		Frequency Response: Normal Mono: SP: 100 Hz ~ 8 kHz LP: 100 Hz ~ 6 kHz SLP: 100 Hz ~ 5 kHz	○	○	○	○	○	○
		Signal-to-Noise Ratio: Normal Mono: SP: more than 42 dB LP/SLP: more than 40 dB	○	○	○	○	○	○
		Wow and Flutter: Normal Mono: SP Less than 0.2% WRMS LP: Less than 0.3% WRMS SLP: Less than 0.4% WRMS	○	○	○	○	○	○
	Tuner	Broadcast Channels: VHF 2 ~ 13, UHF 14 ~ 69 CATV Channels: Midband A through I (14 ~ 22) Superband J through W (23 ~ 36) Hyperband AA ~ EEE (37 ~ 64) Lowband A-5 ~ A-1 (95 ~ 99) Special CATV channel 5A (01) Ultraband 65 ~ 94, 100 ~ 125	○	○	○	○	○	○

ITEM		SPECIFICATION	1	2	3	4	5	6
VCR	Tape Speed	SP: 1-5/16 i.p.s (33.35 mm/sec), LP: 21/32 i.p.s (16.67 mm/sec), SLP: 7/16 i.p.s (11.12 mm/sec) Record/Playback Time: 8 Hrs with 160 min. type tape used in SLP mode FF/REW Time: Less than 3 min. (120 min. type tape)	○	○	○	○	○	○
	Tape Format	Tape width 1/2" (12.7 mm) high density tape	○	○	○	○	○	○
FM Radio	Band Range	87.5 ~ 108.1 MHz	○	-	○	○	-	○
DISPLAY	Picture Tube	13 inch measured diagonal 90° deflection	○	○	○	-	-	-
		20 inch measured diagonal 90° deflection	-	-	-	○	○	○
GENERAL	Power	Source: 120V AC ± 10%, 60 Hz ± 0.5%	○	○	○	○	○	○
		Consumption: Approx. 69 watts (power on), Approx. 5 watts (power off)	○	○	○	-	-	-
		Approx. 110 watts (power on), Approx. 5 watts (power off)	-	-	-	○	○	○
	Television System	EIA Standard (525 lines, 60 fields) NTSC Color Signal	○	○	○	○	○	○
	Operating Condition	41°F(5°C) ~ 104°F(40°C) (Temperature) 10% ~ 75% (Humidity)	○	○	○	○	○	○
	Dimension	15-3/16"(386mm) (W) X 15-3/16"(385mm) (H) X 16-11/16"(424mm) (D)	○	○	○	-	-	-
		20-5/16"(515mm) (W) X 19-7/8"(505mm) (H) X 19-1/16"(484mm) (D)	-	-	-	○	○	○
	Weight	26.4 lbs. (12 kg)	○	-	○	-	-	-
		26.0 lbs. (12 kg)	-	○	-	-	-	-
		50.6 lbs. (23 kg)	-	-	-	○	-	○
		51 lbs. (23 kg)	-	-	-	-	○	-

1. PV-M1348/PV-M1358W
2. VV1308/VV1318W
3. PV-M1368/PV-M1378W
4. PV-M2038/PV-M2048
5. VV2008/VV2018W
6. PV-M2058

Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.

Panasonic® / Quasar®

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK	MODEL	MARK
PV-M1348	A	PV-M2038	G
PV-M1358W	B	PV-M2048	H
VV1308	C	VV2008	I
VV1318W	D	VV2018W	J
PV-M1368	E	PV-M2058	K
PV-M1378W	F	NOT USED	Z

TABLE OF CONTENTS

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. **IMPORTANT SAFETY NOTICE**
   There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.
2. An Isolation Transformer should always be used during the servicing of Combination VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect Combination VCR from being damaged by accidental shorting that may occur during servicing.
3. When servicing, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shield, and isolation R-C combinations are properly installed.
5. Before turning the receiver on, measure the resistance between B+ line and chassis ground. Connect (-) side of an ohmmeter to the B+ lines, and (+) side to chassis ground. Each line should have more resistance than specified, as follows :

B+ Line	Minimum Resistance	
130V	1K ohm	(Hot chassis ground)
27V	180 ohms	(Cold chassis ground)
17V	110 ohms	(Cold chassis ground)

6. When the TV set is not used for a long period of time, unplug the power cord from the AC outlet.
7. Potentials, as high as (25.0KV: **Model A, B, C, D, E, F**) or (30.0KV: **Model G, H, K**) or (29.0KV: **Model I, J**) are present when this TV set is in operation. Operation of the TV set without the rear cover involves the danger of a shock hazard from the TV set power supply. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture tube to the CRT ground of receiver before handling the tube.
8. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. For physically operated power switches, turn power on. Otherwise skip step 2.
3. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screwheads, connectors, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 M ohm and 12 M ohms. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

LEAKAGE CURRENT HOT CHECK

1. Plug the AC cord directly into the AC outlet.
   Do not use a isolation transformer for this check.
2. Connect a 1.5K ohms, 10 watts resistor, in parallel with a 0.15 micro farad capacitor, between each exposed metallic part on the set and a good earth ground , as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volt RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks. Leakage current must not exceed 1/2 milliampere. In case a measurement is outside of the limits specified, there is a possibility of shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

Hot-Check Circuit

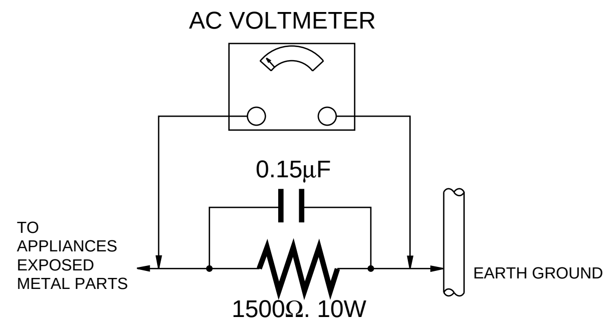


Figure 1

X-RADIATION

WARNING :

1. The potential source of X-Radiation in TV sets is the High Voltage section and the picture tube.
2. When using a picture tube test fixture for service, ensure that the fixture is capable of handling (25.0KV: **Model A, B, C, D, E, F**) or (30.0KV: **Model G, H, K**) or (29.0KV: **Model I, J**) without causing X-Radiation.

NOTE :
It is important to use an accurate periodically calibrated high voltage meter.

1. Reduce the brightness to minimum.
2. Set the SERVICE switch to SERVICE .
3. Measure the High Voltage. The meter reading should indicate (23.5 +/- 1.5KV: **Model A, B, C, D, E, F**) or (28.5 +/- 1.5KV: **Model G, H, K**) or (27.5 +/- 1.5KV: **Model I, J**).
   If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
4. To prevent an X-Radiation possibly, it is essential to use the specified picture tube.

HORIZONTAL OSCILLATOR DISABLE CIRCUIT TEST

SERVICE WARNING :

The test must be made as a final check before set is returned to the customer.

1. With the rear cover removed, supply about a 120V AC power source to the set, turn on the set.
2. Set the customer controls to normal operating positions.
3. Short between TP891 and TP892 on the Main circuit board with a jumper wire. Confirm that the picture goes out of horizontal sync.
4. If this does not occur, the horizontal oscillator disable circuit is not operating. Follow the Repair Procedures of horizontal oscillator disable circuit before the set is returned to customer.

REPAIR PROCEDURES OF HORIZONTAL OSCILLATOR DISABLE CIRCUIT

1. Connect a DC voltmeter between capacitor C513 (+) on the Main circuit board and chassis ground.
2. If approximately +21.9V is not present at that point when 120V AC is applied, find the cause. Check R503, R5505, C5507, C513 and D503.
3. Carefully check above specified parts and related circuits and parts. When the circuit is repaired, try the horizontal oscillator disable circuit test again.

CIRCUIT EXPLANATION

HORIZONTAL OSCILLATOR DISABLE CIRCUIT

The positive DC voltage, supplied from the D503 cathode for monitoring high voltage, is applied to the IC5301 Pin11 through R503 and R5504. Under normal conditions, the voltage at IC5301 Pin 11 is less than approx 3V. If the high voltage at Flyback Tr Pin 5 exceeds the specified voltage, the positive DC voltage which is supplied from the D503 cathode also increases. The increased voltage is applied to IC5301 Pin11 through R503 and R5504. Due to the increased voltage at IC5301 Pin11, the horizontal oscillator frequency increases, the picture goes out of horizontal sync, the beam current decreases and the picture becomes dark in order to keep X-radiation under specification.

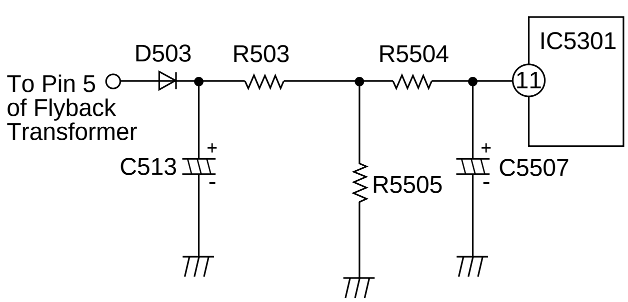


Figure 2

PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors are semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION:
Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

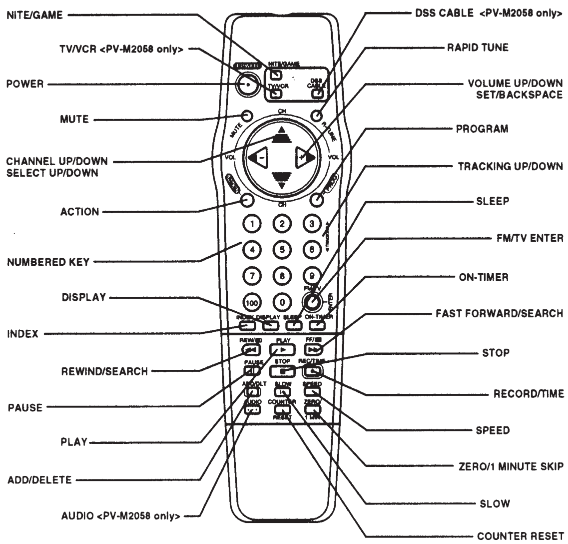
"NOTE to CATV system installer :

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical."

OPERATION GUIDE

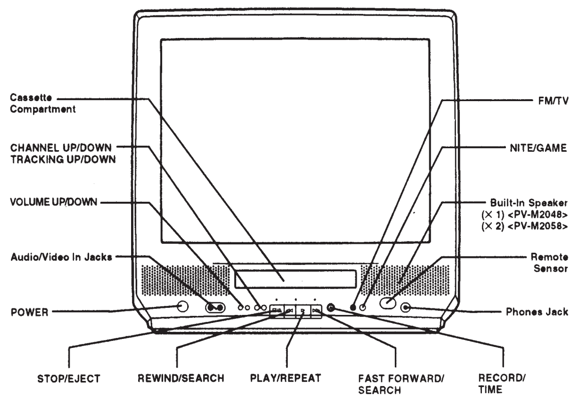
Location of Controls

Remote Control Buttons



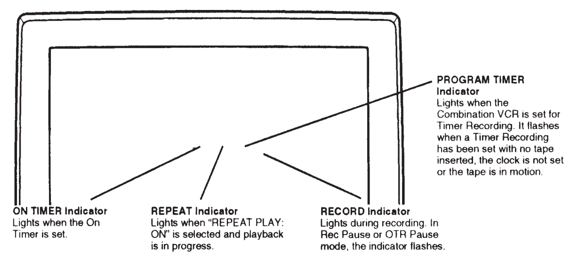
Model PV-M2058 remote is shown here.

Front View of the Combination VCR

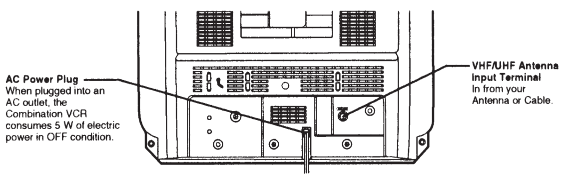


Indicators on the Front Panel

Model PV-M2058 unit is shown here.



Rear View of the Combination VCR



One Time Setup

***Important:** If the remote control POWER, CH ▲▼, ACTION, PROG, INDEX, ON-TIMER, R-TUNE, FM/TV, and ADD/DLT button does not work when pressed, press the TV/VCR button on the remote and try the button again.

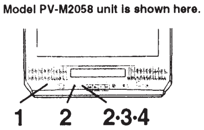
When the Combination VCR is turned on for the first time, it automatically enters the setup mode. Setup includes the following:

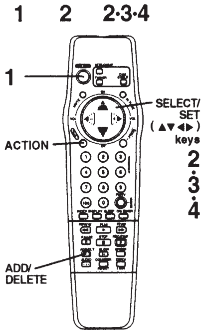
- Choose the language for on-screen menus and messages.
- Tell the Combination VCR how your equipment is hooked up so the Combination VCR can correctly place channels into memory.
- Get the Combination VCR ready for clock set.

Check list before you begin.

☐ Your Combination VCR is connected to an Antenna, or Cable system.

Model PV-M2058 unit is shown here.





Model PV-M2058 remote is shown here.

Using the ▲▼◀▶



Whenever a menu or program screen is displayed, CHANNEL UP/DOWN and VOLUME UP/DOWN on the remote control function as ▲▼◀▶ only. For VOLUME UP/DOWN functions, use the buttons on the Combination VCR.

To Set Language, Channels, and Clock

1 Press POWER* to turn the Combination VCR on.

2 Press CH ▲▼, or VOL ▶ for on screen displays in English, Spanish or French.

SELECT LANGUAGE
PUSH CH ▲ :English
OPRIMIR CH ▼ :Español
APP. VOL + :Français

- If you use a cable box, the cable box must be left on for auto channel set.

Important: If you use a cable box, turn it on and select the PBS station in your time zone.

3 Press CH ▲ to start Channel Auto Set and Clock Auto Set.

CHANNEL/CLOCK AUTO SET
CONNECT ANTENNA CABLE AND IF YOU USE A CABLE BOX, TUNE IT TO YOUR LOCAL PBS CH THEN...
PLEASE PUSH CH UP KEY

These on-screen displays will appear in sequence.

- CH AUTO SET PROCEEDING
- CH AUTO SET COMPLETED
- AUTO CLOCK SET PROCEEDING

or

Case 1

7/28/1998 TUE 12:00PM
DST:ON
SETTING : CH 10
AUTO CLOCK SET
COMPLETED
END : PUSH CH UP KEY

Case 2

AUTO CLOCK SET
IS INCOMPLETE
PUSH ACTION TO SET CLOCK

4 Case 1 If the displayed time is correct, press CH ▲ to exit.

- This concludes one time Combination VCR setup.
- See important note at the bottom of this page.

If the displayed time and DST. are not correct...
If you happen to live close to two time zones, the Combination VCR may have recognized the PBS channel (setting channel) in the wrong time zone. Please do the following to correct the situation.

a. Make a note of the SETTING: CH number shown on-screen and press CH ▲ to exit.
b. Delete the setting channel from the Combination VCR channel memory. (See the Add or Delete a Channel section.)
c. Press ACTION to display the MAIN MENU.
d. Press ▲▼◀▶ to select "CLOCK," and then press ACTION to display the SET CLOCK screen.
- If you use a cable box and have multiple PBS stations, tune the cable box to a different PBS station and try auto clock set again using the menu.

e. Press ▲▼ to select "AUTO CLOCK SET," and then press ▶ to set and CH ▲ to start Auto Clock set.

IMPORTANT NOTE FOR AUTO CLOCK SET

- Auto clock set will be performed when the Combination VCR is turned off the first time each day. If you use a cable box and you want auto clock set to be performed, the cable box must be left on and tuned to the PBS channel at the time the Combination VCR power is turned off.
- If you use a DSS receiver, it must be turned off for auto clock set.
- If you use Audio/Video Jack connection between the Combination VCR and Cable Box or DSS receiver, you must also connect the RF coaxial cable in order to use the auto clock set and channel auto set features.
- If for any reason the time is changed manually, automatic time correction will not occur.

Case 2 If AUTO CLOCK SET IS INCOMPLETE appears, please set the clock manually.

a. Press ACTION to display the SET CLOCK screen.
b. Press ▲▼ to select and ▶ to enter the month, date, year, time, and DST. (Daylight Saving Time).

To Make Corrections, repeatedly press ◀▶ to move the cursor to the incorrect entry and make the correction.

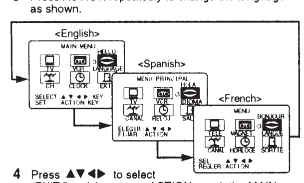
c. Press ACTION twice to start the clock and exit the MAIN MENU.

SET CLOCK
1/ / :
DST:ON
SELECT MONTH
SELECT :▲ ▼ KEY
SET :▶ KEY
END :ACTION KEY

- "DST:ON" automatically adjusts for daylight saving time.

To Change the OSD Language

1 Press ACTION to display the MAIN MENU.
2 Press ▲▼◀▶ to select the language selection icon.
3 Press ACTION repeatedly to change the language as shown.

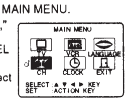


4 Press ▲▼◀▶ to select "EXIT," and then press ACTION to exit the MAIN MENU.

To Replace Channels in Memory

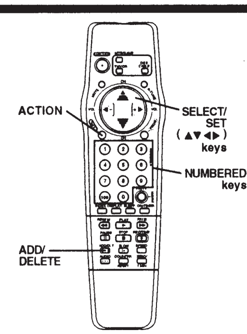
In case, you have cable installed, etc.

1 Press ACTION to display the MAIN MENU.
2 Press ▲▼◀▶ to select "CH," and then press ACTION to display the SET UP CHANNEL screen.



3 Press ▲▼ repeatedly to select "ANTENNA," and then press ▶ to select your antenna system ("TV" or "CABLE").
4 Press ▲▼ to select "AUTO SET," and then press ▶ to start.
- To exit the SET UP CHANNEL screen, press ACTION twice.

SET UP CHANNEL
ANTENNA CABLE
AUTO SET
CHANNEL CAPTION
CABLE BOX SET UP
VCR Plus+ CH SET UP
SELECT :▲ ▼ KEY
SET :▶ KEY
END :ACTION KEY



Model PV-M2058 remote is shown here.

To Set or Reset the Clock

In case the clock is wrong, or a power failure occurred.

1 Press ACTION to display the MAIN MENU.
2 Press ▲▼◀▶ to select "CLOCK." Then, press ACTION to display the SET CLOCK screen.

SET CLOCK
AUTO CLOCK SET
MANUAL
SELECT :▲ ▼ KEY
SET :▶ KEY
END :ACTION KEY

3 Press ▲▼ to select "MANUAL," and then ▶ to display the SET CLOCK screen.

SET CLOCK
1/ / :
DST:ON
SELECT MONTH
SELECT :▲ ▼ KEY
SET :▶ KEY
END :ACTION KEY

4 Please do steps **b** and **c** at the top of this page.

To Add or Delete a Channel

1 Select a channel using the NUMBERED keys to add or CH ▲▼ to delete.
2 Press ADD/DLT to add or delete the channel.

CHANNEL 08 ADDED

CHANNEL 08 DELETED

- To select a channel once it's deleted, use the NUMBERED keys.

NOTES

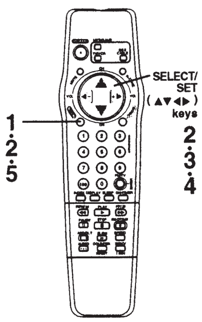
- This Combination VCR will accurately maintain its calendar up to Dec. 31, 2089, 11:59PM.
- Normal TV or Cable channels are automatically selected and placed in memory depending on how your Combination VCR is hooked up.

Picture Adjustment

***Important:** If the remote control POWER, CH ▲▼, ACTION, PROG, INDEX, ON-TIMER, R-TUNE, FM/TV, and ADD/DLT button does not work when pressed, press the TV/VCR button on the remote and try the button again.

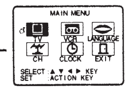
Check list before you begin.

☐ All connections are made.
☐ Your Combination VCR is plugged in.



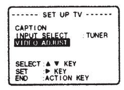
Model PV-M2058 remote is shown here.

1 Press ACTION* to display the MAIN MENU.

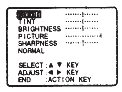


2 Press ▲▼◀▶ to select "TV," **and then press ACTION** to display the SET UP TV screen.

3 Press ▲▼ to select "VIDEO ADJUST," **and then press ▶** to display the VIDEO ADJUST screen.

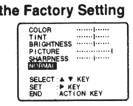


4 Press ▲▼ repeatedly to select the desired adjust item, **and then press ◀▶** to adjust. (See description below.)



To Reset Picture Controls to the Factory Setting

Press ▲▼ and ▶ to select and set "NORMAL."
All controls return to their factory settings.



5 Press ACTION three times to return to the normal screen.

- If no button is pressed within 5 minutes, the video adjust overlay disappears.

Picture Adjustment

COLOR Control
To adjust the intensity of the color.

TINT Control
To adjust for the most natural fleshtones.

BRIGHTNESS Control
To adjust the brightness of the picture.

PICTURE Control
To adjust the intensity of the picture by adjusting contrast and color level at the same time and in the proper balance.

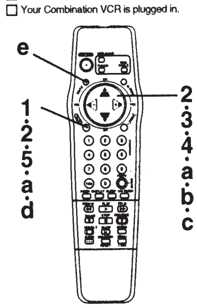
SHARPNESS Control
To adjust the sharpness of the picture.

Closed Caption System

***Important:** If the remote control POWER, CH ▲▼, ACTION, PROG, INDEX, ON-TIMER, R-TUNE, FM/TV, and ADD/DLT button does not work when pressed, press the TV/VCR button on the remote and try the button again.

Check list before you begin.

☐ All connections are made.
☐ Your Combination VCR is plugged in.



Model PV-M2058 remote is shown here.

Closed Caption Modes From which to Choose

Caption Mode: CAPTION C1 or C2
A narration of selected TV programs will be displayed on the screen. Check your TV program listings for C.C. (Closed Caption) broadcasts.

Caption Mode: TEXT C1 or C2
The lower half of the screen will be blocked out. When the TV station broadcasts text, such as program listings, special information, etc., it will appear in this space.

Caption Mode: OFF
Narration will not appear on the screen even if a closed caption or text broadcast is received.

Note: The closed caption or text signal may be broadcast over C1, C2, or both. Also, text contents can vary so you may wish to try different settings.

Recording and Playing Back a Closed Caption/Text Program

Record: Your Combination VCR will automatically record the Closed Caption/Text signal. Just follow normal recording operation.

Playback: To display the Closed Caption narration or Text during playback, follow steps 1~3 in the above section, and then select the desired caption mode in step 4.

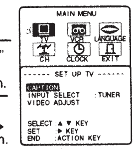
Closed Caption Mode Feature

This multi-use system not only allows the hearing impaired to enjoy selected programs, but also makes useful information from TV stations available to everyone. At first, read through the different closed caption options below left.

1 Press ACTION* to display the MAIN MENU.

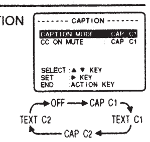
2 Press ▲▼◀▶ to select "TV," **and then press ACTION** to display the SET UP TV screen.

3 Press ▲▼ to select "CAPTION," **and then press ▶** to display the CAPTION screen.



4 Press ▲▼ to select "CAPTION MODE," **and then press ▶** repeatedly to select the desired caption mode. (See "Caption Mode description" below left).

- Each press ▶ will change the display as shown at right.



5 Press ACTION three times to exit the caption mode and return to the normal screen.

Caption On Mute Feature

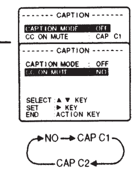
This feature allows you to turn off the sound and, at the same time, display Closed Caption narration. Perfect for when you need silence, but would like to continue watching the program.

a Follow steps 1~3 in the above section.

b In step 4, press ▶ to select "OFF."

c Press ▲▼ to select "CC ON MUTE," **and then press ▶** repeatedly to select the desired caption on mute mode.

- Each press of ▶ will change the display as shown at right.
- The caption may be broadcast over CAP C1 or C2.



d Press ACTION three times to return to the normal screen.

e Press MUTE to mute the sound. The closed caption narration (if available) is displayed on the screen.

- Press MUTE again to resume normal sound and picture.

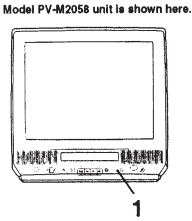
FM Radio

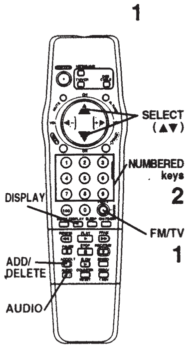
The Combination VCR has an FM radio with built-in antenna, 9 station preset, and a band range of 87.5~108.1 MHz. You can even set the On-Timer to wake up to your favorite music station.

Check list before you begin.

☐ All connections are made.
☐ Your Combination VCR is plugged in.

Model PV-M2058 unit is shown here.





Model PV-M2058 remote is shown here.

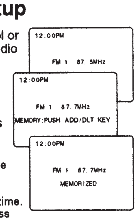
FM Radio Feature Setup

a Press FM/TV on the remote control or Combination VCR to select FM Radio mode.

b In FM Radio mode, press a NUMBERED key (1~9).

c Press ▲▼ to select the desired radio station. (Each press changes the frequency by 200 KHz.)

Quick Station Scan
Hold down ▲ or ▼ for more than one second, and then release.
The Combination VCR automatically advances the frequency 200KHz at a time.
When nearing the desired station, press ▲ or ▼ to select the station.



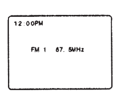
d Press ADD/DLT to memorize the desired station.

- To preset other stations, repeat steps **b~d**.

To Make Corrections,
press the NUMBERED key to select the memorized number, and then repeat steps **b~d** to change the memorized station.

Using the FM Radio

1 Press FM/TV on the remote control or Combination VCR to select FM Radio mode.



2 Press a NUMBERED key (1~9) to select a preset station (see steps **a~d** above).

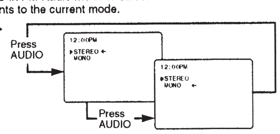
Note: Once stations are preset, the selected station and current time will be displayed when FM/TV is pressed ON. After 10 seconds the station disappears. To remove the time, press DISPLAY. If DISPLAY is pressed while the station is still on screen or there is no display, the Combination VCR status screen appears.

To cancel FM Radio mode, press FM/TV again to return to the normal screen.

To Select Audio Mode for FM Radio <For Model PV-M2058 only>

Press AUDIO in FM Radio mode to select "STEREO" or "MONO."
An arrow points to the current mode.

< Example >



NOTES

- If INDEX is pressed while in the FM radio mode, you will not be able to select other stations with the NUMBERED keys.
- You can not record FM radio stations onto a Video cassette tape.
- You may get improved FM reception for some stations by repositioning the Combination VCR.
- You can not select the FM Radio mode during playback or record, or while a blue back screen (ACTION, PROG, and ON-TIMER) is displayed.

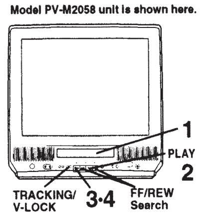
Playback a Tape

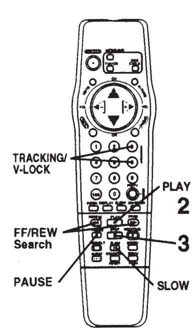
***Important:** If the remote control POWER, CH ▲▼, ACTION, PROG, INDEX, ON-TIMER, R-TUNE, FM/TV, and ADD/DLT button does not work when pressed, press the TV/VCR button on the remote and try the button again.

Check list before you begin.

☐ All connections are made.
☐ Your Combination VCR is plugged in.

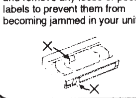
Model PV-M2058 unit is shown here.





Model PV-M2058 remote is shown here.

Caution:
Please inspect your cassette tapes and remove any loose or peeling labels to prevent them from becoming jammed in your unit.



1 Insert a cassette.

- The Combination VCR power comes on automatically.

2 Press PLAY on the remote control or Combination VCR to start playback.

- Playback begins automatically if cassette has no record tab.

3 Press STOP on the remote control or Combination VCR to stop playback.

- To rewind the tape, press REW.

4 Press STOP/EJECT on the Combination VCR to eject the cassette.

- You may eject a cassette with power on or off.

To Find a Particular Scene During Playback

Press REW or FF on the remote control or Combination VCR to quickly locate a scene.

- Search speed for SP mode tapes is 7 times <For Model PV-M2058 only> and SLP mode tapes 21 times the normal speed.
- Some noise bars will appear during search.

Special Effects During Playback

These features work best in SP <For Model PV-M2058 only> or SLP mode. The sound will be muted.

Slow Motion Playback
Press SLOW to start slow motion playback. Press PLAY or SLOW to release.

Still (Freeze) Frame Picture
Press PAUSE to freeze and release the picture.

- To reduce picture noise, first press SLOW. Next, use the 3 or 6 NUMBERED key on the remote control or CH ▲▼* on the Combination VCR to clear up the picture. Now, press PAUSE.

Frame by Frame Advance
While in Still mode, press SLOW repeatedly or hold down to advance the still picture one frame at a time. Press PAUSE or PLAY to release.

(After the Combination VCR is in Still or Slow mode for 3 minutes, it will switch to the Stop mode automatically to protect the tape and the video head.)

Features for a Quality Picture

Digital Auto Tracking
This feature continuously analyzes the signal and adjusts for optimum picture quality.

Manual Tracking Control
Use during Playback and Slow Motion mode to reduce picture noise. Press the 3 or 6 NUMBERED key on the remote control or CH ▲▼ on the Combination VCR until the picture clears up.
To return to Auto Tracking, press POWER off and then on again.

V-Lock Control <For Model PV-M2058 only>
In Still mode, the 3 or 6 NUMBERED key on the remote control or CH ▲▼ on the Combination VCR operate as a V-Lock control to reduce jitter. Press one of these keys until the picture is stabilized.

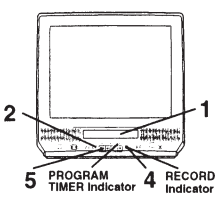
PanaBlack™ Picture Tube
This Combination VCR uses a PanaBlack™ picture tube for better color reproduction and picture contrast.

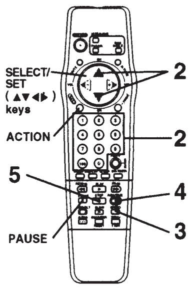
Record On a Tape

Check list before you begin.

- ☐ All connections are made.
- ☐ Your Combination VCR is plugged in.

Model PV-M2058 unit is shown here.





Model PV-M2058 remote is shown here.

Selecting the Input Mode

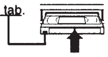
You can select the Input Mode in either of the following ways.

■ Press CH ▲▼. The display will change in the order below.

→ 1 — 2 — 3 (CABLE) — (CABLE) 125 or (TV) 69 → LINE →

■ a Press ACTION to display the MAIN MENU.
b Press ▲▼◀▶ to select "TV," and then press ACTION to display the SET UP TV screen.
c Press ▲▼ to select "INPUT SELECT," and then press ▶ repeatedly to select "TUNER" or "LINE."

1 Insert a cassette with record tab.



- The Combination VCR power comes on automatically.

2 Press CH ▲▼, or NUMBERED keys on the remote control to select a channel.

CH 08
ABC

- Or, press CH ▲▼ on the Combination VCR.
- To record from an outside source, press CH ▲▼ to select LINE input (see bottom of this page).

3 Press SPEED repeatedly until the desired tape speed is displayed .

SLP

SP = Standard Play
LP = Long Play
SLP = Super Long Play

4 Press REC/TIME on the remote control to start recording.

REC 08
ABC
TO SET SPECIFIC REC TIME
PLEASE PUSH REC KEY

- Or, press REC/TIME on the Combination VCR.
- To edit out unwanted portions, press PAUSE to pause the recording in progress. To release, press PAUSE again.
- You can not view another channel during recording.

One Touch Timer Recording (OTR)

The Combination VCR stops recording at a preset time.

In step 4, press REC/TIME repeatedly to set the length of the recording. Each press will change the time as shown.

→ Normal Rec → 0:30 → 1:00 → 1:30 → 2:00 → 3:00 → 4:00 →

- The PROGRAM TIMER indicator lights on the front panel.

5 Press STOP on the remote control to stop recording.

- Or, press STOP/EJECT on the Combination VCR.

NOTES

- While it is possible to change the tape speed when you are recording, there will be some distortion on the tape where the change occurred.
- The remaining recording time of an OTR can be displayed by pressing DISPLAY.
- After the Combination VCR has been in Rec Pause mode for 5 minutes, it will stop automatically to protect the tape and video head.

Timer Recording

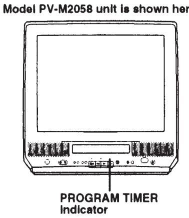
***Important:** If the remote control POWER, CH ▲▼, ACTION, PROG, INDEX, ON-TIMER, R-TUNE, FM/TV, and ADD/DLT button does not work when pressed, press the TV/VCR button on the remote and try the button again.

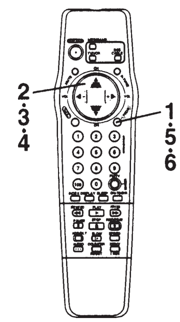
Your Combination VCR can be set up to do a recording while you are away or otherwise occupied. Up to 8 programs can be placed in memory. You can choose to record one time, daily, or weekly.

Check list before you begin.

- ☐ All connections are made.
- ☐ Your Combination VCR is plugged in.
- ☐ The clock is set.
- ☐ The tape is long enough.
- ☐ The record tab is in place.

Model PV-M2058 unit is shown here.





Model PV-M2058 remote is shown here.

1 Press PROG* to display the SET PROGRAM screen.

----- SET PROGRAM ------
VCR Plus+ PROGRAM
TIMER PROGRAM
SELECT : ▲ ▼ KEY
SET : ▶ KEY

2 Press ▲▼ to select "TIMER PROGRAM" **and then press** ▶ to display the program screen.

- If a program is already in memory, press ▲▼ repeatedly, and then ▶ to select an unused program number.

DATE/ START STOP CH
7 FRI --:-- --:-- --
TODAY
CATEGORY : N/A SLP
SELECT START DATE
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : PROG KEY

3 Press ▲▼ and ▶ to select and set one of the following as the DATE:

1~31 = One time recording
DAILY = Same time MON ~ FRI
WEEKLY SUN~SAT = Same time once a week

Example

Today's Date — 7 → 8 — 9 ······· 31 — 1 — 2 ······ 6 — DAILY — WEEKLY (SUN) — WEEKLY (MON) ······ WEEKLY (SAT) → 7
SELECT▲/▼ Selection Order

4 Press ▲▼ and ▶ to select and set each of the remaining items as follows.

Remaining Items:

- START time
- STOP time
- CH(annel) number, or LINE for outside source recording
- Category [N/A (not applicable), SPORTS, MOVIE, COMEDY, MUSIC, DRAMA]
- Speed (SP, LP, SLP)

To Make Corrections

Repeatedly press ▶ or ◀ to move the cursor to the right or left, and then make the correction.

5 Press PROG to end the program.

- This screen appears for confirmation.

P DT START STOP CH SPD
1 day 9:00a 12:00a 08 SP
2 -- --:-- --:-- -- --
3 -- --:-- --:-- -- --
4 -- --:-- --:-- -- --
CANCEL : ADD/DLT KEY
SELECT 1-8 : ▲ ▼ KEY
ENTER : ▶ KEY
END : PROG KEY

To Enter More Programs

Press ▲▼ and ▶ to select and set a blank program number, and then repeat steps 3 and 4.

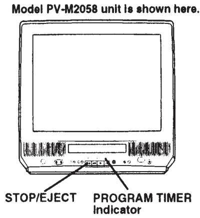
6 Press PROG twice to exit this mode and return to the normal screen.

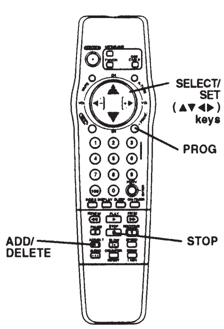
- The PROGRAM TIMER indicator lights on the front panel.
- If you're using a cable box, make sure that it is tuned to the desired channel and the power is left on for timer recording.

Two minutes before the Timer Recording starts, "TIMER REC WILL START SOON" will appear on-screen.

Timer Recording

Model PV-M2058 unit is shown here.





Model PV-M2058 remote is shown here.

Cancel a Timer Recording:
(Recording is in progress)

Hold down STOP for a few seconds to cancel the Timer Recording.

- Any future daily or weekly recordings will be performed as programmed.

Replace Program Contents:
(Recording is not in progress)

1 Do steps 1 and 2 on previous page. All currently set programs will be displayed on-screen.

2 Press ▲▼ repeatedly to select the desired program, and then press ▶ to display the settings.

P DT START STOP CH SPD
1 -- --:-- --:-- -- --
2 8 10:00p 12:00p 125 SP
3 10 8:00p 9:00p 10 SP
4 SU 9:00p 10:00p L LP
SELECT 1-8 : ▲ ▼ KEY
ENTER : ▶ KEY
END : PROG KEY

3 Press ▲▼ repeatedly to select, and then press ▶ to enter replacement information.

4 Press PROG three times to exit this mode and return to the normal TV screen.

DATE/ START STOP CH
8 SAT 10:00P 12:00P 102
TODAY CBS
CATEGORY : SPORTS SP
SELECT START DATE
SELECT : ▲ ▼ KEY
SET : ◀ ▶ KEY
END : PROG KEY

Review or Clear Program Contents:
(Recording is not in progress)

a Do steps 1 and 2 on previous page. All currently set programs will be displayed on-screen.

b Press ▲▼ repeatedly to select the desired program number.

P DT START STOP CH SPD
1 day 9:00a 12:00a 08 SP
2 8 10:00p 12:00p 125 SP
3 10 8:00p 9:00p 10 SP
4 SU 9:00p 10:00p L LP
CANCEL : ADD/DLT KEY
SELECT 1-8 : ▲ ▼ KEY
ENTER : ▶ KEY
END : PROG KEY

c Press the ADD/DLT if you want to clear the program.

d Press PROG twice to exit this mode and return to the normal TV screen.

P DT START STOP CH SPD
1 -- --:-- --:-- -- --
2 8 10:00p 12:00p 125 SP
3 10 8:00p 9:00p 10 SP
4 SU 9:00p 10:00p L LP
SELECT 1-8 : ▲ ▼ KEY
ENTER : ▶ KEY
END : PROG KEY

NOTES

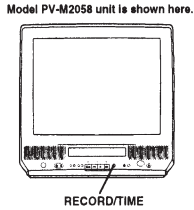
- If "PLEASE PREPARE FOR TIMER REC" appears and/or the PROGRAM TIMER indicator flashes, check that a cassette with record tab is loaded and the Combination VCR is in Stop mode.
- If the start times of two programs overlap, the lower numbered program will have priority.
- If the start time for a timer recording comes up during a normal recording or One Touch Recording, the timer recording will not be performed.
- If there is a power interruption of more than one minute, the recording may not be performed or continue.
- If "INCOMPLETE" appears after all items have been set, check all entries and make necessary corrections.

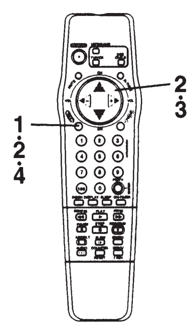
Special VCR Features

Check list before you begin.

- ☐ All connections are made.
- ☐ Your Combination VCR is plugged in.

Model PV-M2058 unit is shown here.





Model PV-M2058 remote is shown here.

VCR Lock Feature

When activated, this feature prohibits all operations except for timer recording and tape eject. This feature may be used to keep young children from operating the Combination VCR.

Hold down REC/TIME on the Combination VCR without a cassette inserted **for 7 seconds** during Stop mode.

VCR LOCK ACTIVATED

To Cancel the VCR Lock feature, with or without a cassette inserted, hold down REC/TIME on the Combination VCR for 7 seconds again during Stop mode.

- VCR Lock mode is cancelled automatically after about 24 hours as long as the clock is set.

VCR LOCK OFF

Warning Beeper Feature

When you select BEEPER ON, a short warning will sound each time an invalid entry or incomplete operation is made.

1 Press ACTION to display the MAIN MENU.

MAIN MENU
TV VCR LANGUAGE
CH CLOCK EXIT
SELECT : ▲ ▼ ◀ ▶ KEY
SET : ACTION KEY

2 Press ▲▼◀▶ to select "VCR," **and then press ACTION** to display the SET UP VCR screen.

3 Press ▲▼ to select "BEEPER," **and then press** ▶ to select "ON" or "OFF."

------ SET UP VCR ------
REPEAT PLAY : ON
BEEPER : OFF
NOISY CH BLUE BACK : ON
TIME STAMP : OFF
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : ACTION KEY

4 Press ACTION twice to exit this screen.

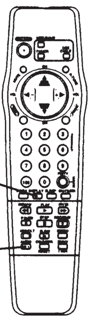
MTS Broadcast/TV Stereo System

<For Model PV-M2058 only>

Check list before you begin.

- ☐ All connections are made.
- ☐ Your Combination VCR is plugged in.

IMPORTANT NOTE:
This stereo system is designed for TV viewing only. Recording and playback will always be in monaural.



Receivable Broadcast Types

The following are possible broadcast types with their accompanying on-screen displays. The signal being received is indicated with an "((" mark while the selected audio mode is indicated with an arrow. To change the audio mode for these broadcasts, follow the "Select Audio Mode for TV Viewing" section (below).

Press DISPLAY to display the broadcast signal currently being received and the selected audio mode.

MTS Stereo and SAP broadcast
Multi-channel Television Sound Stereo (main language) and Secondary Audio Program (sub language) broadcasts are being received simultaneously. Select the STEREO or SAP audio mode as desired.

```
STOP   12:00AM      ABC
               0:00:00
▶STEREO◆             SP
▶SAP
 MONO
```

MTS Stereo broadcast
Multi-channel Television Sound Stereo broadcast is being received. Select the STEREO audio mode.
- If a stereo broadcast is weak and the display flickers, you may want to select the MONO audio mode for better results.

```
STOP   12:00AM      ABC
               0:00:00
▶STEREO◆             SP
 SAP
 MONO
```

SAP broadcast
Secondary Audio Program (sub language) broadcast is being received. Select SAP audio mode for the sub language.

```
STOP   12:00AM      ABC
               0:00:00
 STEREO              SP
▶SAP   ◆
 MONO
```

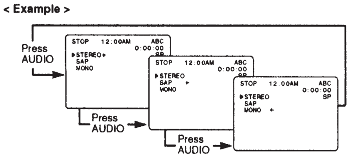
MONO broadcast
Normal monaural sound broadcast is being received.

```
STOP   12:00AM      ABC
               0:00:00
 STEREO              SP
 SAP
 MONO  ◆
```

Select Audio Mode for TV Viewing

Press AUDIO to select the desired audio mode as described above. (Arrow shows selection.)
- Each press of AUDIO will change the audio mode as shown below.

< Example >



VCR Plus+ Setup

Easy Taping.

***Important:** If the remote control POWER, CH ▲▼, ACTION, PROG, INDEX, ON-TIMER, R-TUNE, FM/TV, and ADD/DLT button does not work when pressed, press the TV/VCR button on the remote and try the button again.

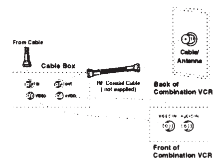
VCR Plus+ programming allows you to set most items of a timer recording by simply entering a special code (PlusCode) found in *TV GUIDE* magazine as well as the TV listings in selected newspapers. In order for your Combination VCR to do a VCR Plus+ recording, or a timer recording of cable stations, some setup is required.

At first, choose your Connection Type.

(Then, follow the instructions under the diagram.)

Connection Type A

<CABLE BOX → COMBINATION VCR>

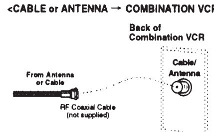


If your system looks like this, do the following.

1. **Complete the "Cable Box Setup" section at right.**
2. **Skip to VCR Plus+ Programming.**

Connection Type B

<CABLE or ANTENNA → COMBINATION VCR>



If your system looks like this, do the following.

1. **Skip the "Cable Box Setup" section at right and turn to right.**
2. **Complete the "VCR Plus+ Channel Setup" section.**
3. **Turn to VCR Plus+ Programming.**

VCR Plus+ and PlusCode are trademarks of Gemstar Development Corporation.
The VCR Plus+ system is manufactured under license from Gemstar Development Corporation.

Cable Box Setup

For Connection Type A (see left) only

1 Press ACTION* to display the MAIN MENU.

2 Press ▲▼◀▶ to select "CH," **and then press ACTION** to display the SET UP CHANNEL screen.

```
        MAIN MENU
  TV      VCR     LANGUAGE
  CH      CLOCK   EXIT
SELECT :▲ ▼ ◀ ▶ KEY
SET    :ACTION KEY
```

3 Press ▲▼ to select "CABLE BOX SET UP," **and then ▶** to set.

```
---- SET UP CHANNEL ----
ANTENNA  : CABLE
AUTO SET
CHANNEL CAPTION
CABLE BOX SET UP
VCR Plus+ CH SET UP
 SELECT :▲ ▼ KEY
 SET    :▶ KEY
 END    :ACTION KEY
```

4 Press ▲▼ and to select "YES" or "NO," **and then press ▶** to set.

Select YES if all channels are received via the cable box (connection "A" at left). Then, go to step 5.

Select NO if your cable connection "B" at left. Press ACTION to exit and turn to right.

```
  ARE YOU USING
  A CABLE BOX?
      YES
      NO
SELECT :▲ ▼ KEY
SET    :▶ KEY
END    :ACTION KEY
```

5 Press ▲▼ to select Cable box output channel number, **and then press ▶** to enter.
- If necessary, refer to your cable box manual.
- If you are using Audio/Video jack connection for your cable box, select and set "VIDEO OUT" as the output channel.

```
ENTER CABLE BOX OUTPUT
CHANNEL
        01
SELECT :▲ ▼ KEY
```

```
YOUR TV IS RECEIVING
THE OUTPUT OF CABLE BOX
CH 01
```

- This display appears for 5 seconds. (Channel shown is example only)

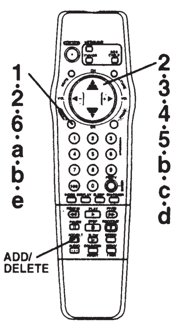
6 Press ACTION twice to end the setup and return to the normal screen.

Go directly to VCR Plus+ Programming.

VCR Plus+ Setup

Easy Taping.

In order for the Combination VCR to read the VCR Plus+ code, some setup is required. A Guide (VCR Plus+) channel number is assigned to each local broadcast and cable station. Because this number sometimes differs from the channel your TV receives the station on, it is necessary to program the Combination VCR with local channel information.



Model PV-M2058 remote is shown here.

Channel Setup Preparations

NOTE:
Complete the steps on this page if your Combination VCR hook-up resembles "B"

Prepare a list like the example below.
This list will help you smoothly enter the information needed in step "d" at right.

You will need the following to complete the list:
- A line up of normal and/or cable stations you receive along with the channel numbers your TV receives them on. A cable channel line-up chart is supplied by your cable company.
- A list of Guide (VCR Plus+) channel numbers assigned to the stations you receive. This list is available in TV Guide and the TV listings found in selected newspapers.

1 Make a chart with 3 columns like the example below. In the left column, fill in the name or call letters of the stations you receive.
2 In the middle column, fill in each station's assigned Guide (VCR Plus+) number found in TV Guide, newspapers, etc.
3 In the right column, fill in the channel number that your TV receives the station on from your channel line-up.

< EXAMPLE ONLY >

Broadcast or Cable Station Name	Assigned Guide (VCR Plus+) Channel No.	Channel No. your TV receives the station on
HBO	33	15
Nickelodeon	38	20
CBS	34	04
FOX	11	

VCR Plus+ Channel Setup

For Connection Type B only

- **Before you begin, complete the Channel Setup Preparations below left.**

Important Note:
If your Combination VCR Connection type changes, from Type A to B, repeat step 4 of previous page, select "NO."

a Press ACTION to display the MAIN MENU.

b Press ▲▼◀▶ to select "CH," **and then press ACTION** to display the SET UP CHANNEL screen.

```
        MAIN MENU
  TV      VCR     LANGUAGE
  CH      CLOCK   EXIT
SELECT :▲ ▼ ◀ ▶ KEY
SET    :ACTION KEY
```

c Press ▲▼ to select "VCR Plus+ CH SET UP," **and then press ▶** to display the VCR Plus+ CH SET UP screen.

```
---- SET UP CHANNEL ----
ANTENNA  : CABLE
AUTO SET
CHANNEL CAPTION
CABLE BOX SET UP
VCR Plus+ CH SET UP
 SELECT :▲ ▼ KEY
 SET    :▶ KEY
 END    :ACTION KEY
```

IMPORTANT NOTE:
For step "d", use the list you prepared at left. You may leave lines blank if you don't receive that station, or if the GUIDE CH number and the CABLE (or TV) CH numbers are the same.

d Press ▶ to move the shaded area to the right side.

Then, press ▲▼ to change the CABLE (or TV) CH number.

Next, press ◀ to set the CABLE (or TV) CH number.

Now, press ▲▼ to continue. Repeat this operation until the list is complete.

```
 VCR Plus+ CH SET UP
 GUIDE CH    CABLE CH
 → 01          --
   02          --
SELECT :▲ ▼ KEY
SET    :▶ KEY
END    :ACTION KEY
```

To Make Corrections
Press ▲▼ and ▶ to select the incorrect CABLE or TV CH number.
Then, press ▲▼ to change, or ADD/DLT to delete the channel.

e Press ACTION three times to exit the VCR Plus+ CH SET UP mode.

NOTES
- Make each entry within 5 minutes or the Combination VCR will leave this mode.
- Once local channels have been programmed, they will stay in memory, even in the case of a power failure.

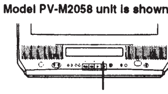
VCR Plus+ Programming

Easy Taping.

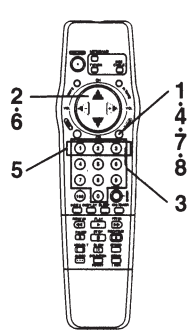
Before you begin, make sure...

- ☐ The clock is set.
- ☐ VCR Plus+ Setup is complete

Model PV-M2058 unit is shown here.



PROGRAM TIMER Indicator



Model PV-M2058 remote is shown here.

Use normal Timer Recording steps if:
- the PlusCode for a program is not listed.
- you anticipate the program, such as a sporting event, to run over the scheduled stop time.
- cancel a timer recording in progress.
- replace program contents.
- review or clear program contents once set.

***Important:** If the remote control POWER, CH ▲▼, ACTION, PROG, INDEX, ON-TIMER, R-TUNE, FM/TV, and ADD/DLT button does not work when pressed, press the TV/VCR button on the remote and try the button again.

1 Press PROG* to display the SET PROGRAM screen.

```
----- SET PROGRAM -----
VCR Plus+ PROGRAM
TIMER PROGRAM
```

2 Press ▲▼ to select "VCR Plus+ PROGRAM" **and then press ▶** to display the Plus Code screen.

```
ENTER PLUSCODE NUMBER
USING 0-9 KEYS
END    :PROG KEY
```

3 Press NUMBERED keys to enter the PlusCode number from your local TV listings.

To Make Corrections
Press ◀ repeatedly to delete the PlusCode number. Then, enter the correct number.

```
ENTER PLUSCODE NUMBER
      123456
  USING 0-9 KEYS
BACKSPACE :◀ KEY
ENTER     :PROG KEY
```

4 Press PROG to lock in your program.

5 Press the 1, 2, or 3 key to select the program type.

```
1 ONCE
2 DAILY(MON-FRI)
3 WEEKLY
TO SELECT PUSH 1, 2 OR 3
END    :PROG KEY
```

6 Press ▲▼ and ▶ to select and set each of the remaining items as follows.

Remaining Items:
- Category [N/A (not applicable), SPORTS, MOVIE, COMEDY, MUSIC, DRAMA]
- Speed (SP, LP, SLP)

To Make Corrections
Repeatedly press ▶ or ◀ to move the cursor to the right or left, and then make the correction.

```
DATE   START  STOP   CH
28 TUE 12:30P 13:30P 69
                    PBS
CATEGORY:N/A         SP
SELECT CATEGORY
SELECT :▲ ▼ KEY
SET    :◀ ▶ KEY
END    :PROG KEY
```

- If you use connection type "A"8, the channel shown in this on-screen display will always be the cable box output channel number.

7 Press PROG to end the program.
- This screen appears for confirmation.

```
P DT  START  STOP  CH SPD
1 day 9:00a 12:00a 08 SP
2 28  12:30p 13:30p 69 SLP
3 -- --:-- --:-- -- --
4 -- --:-- --:-- -- --
CANCEL :ADD/DLT KEY
SELECT 1-8:▲ ▼ KEY
ENTER  :▶ KEY
END    :PROG KEY
```

8 Press PROG twice to exit this mode and return to the normal screen.
- The PROGRAM TIMER indicator lights on the front panel.
- If you're using a cable box, make sure that it is tuned to the desired channel and the power is left on for timer recording.

```
LEAVE CABLE BOX POWER ON
FOR TIMER RECORDING
```

- This display appears if you use a cable box.

NOTES
- You can obtain unlisted PlusCode numbers by calling 1-900-454-7587. Call costs approximately $.95 per minute.
- Avoid overlapping program times.
- An on-screen display will indicate if an invalid PlusCode number has been entered.
- An on-screen display will indicate when all timer programs are full.

SERVICE NOTES

SIMPLIFIED FAULT FINDING DATA

Simplified Self-Diagnostic System facilitates finding the cause of the fault. 4 digit fault code will be displayed on TV screen. The Simplified Fault finding data is stored in the Memory IC (IC6004). This data is cleared after it is displayed and then, the POWER button is pressed back on.

1. With power turned off, press FF and REW buttons on unit together for over 3 seconds.

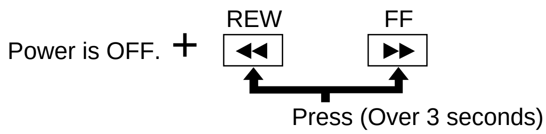


Fig. 1-1

2. TV power goes on and the unit goes into service mode. Fault code indication (4 digit number) will be displayed.

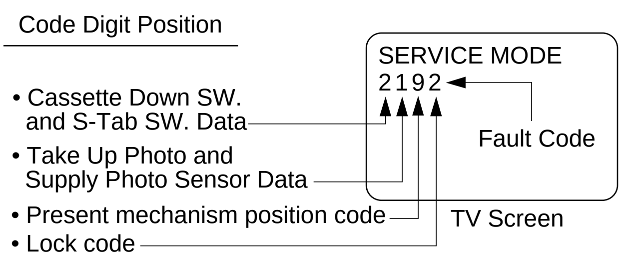
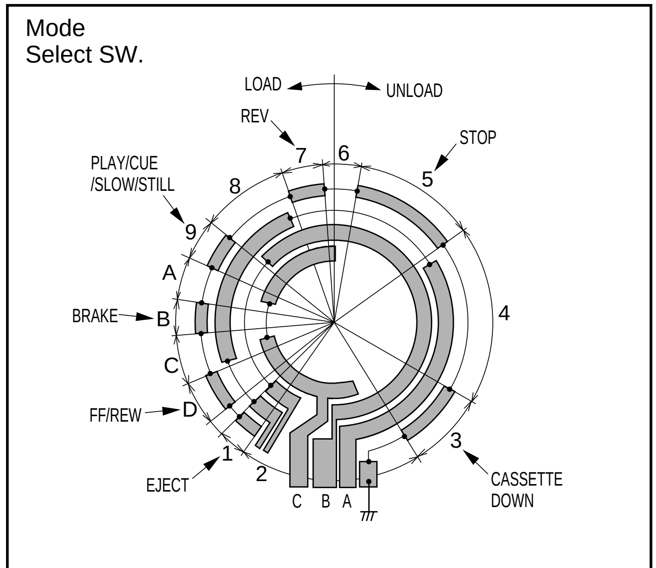


Fig. 1-2

Explanation of Codes	Code No.			
S-Tab SW. Data				
• S-Tab SW. is off.	1			
• S-Tab SW. is on.	2			
Take Up and Supply Photo Sensor Data				
• No light detected at either sensor.		1		
• Take Up Photo Sensor detected at beginning of tape.		2		
• Supply Photo Sensor detected at end of tape.		3		
• Light detected at both sensors.		4		
Present Mechanism Position Code Mechanism Position is indicated. (Refer to Fig. 1-4.)			1 2 3 4 5 6 7 8 9 A B C D	
Lock Code (See Note)				
• VCR is not in shut-off condition.				0
• Reel lock.				1
• Cylinder lock.				2
• Exceeds loading/unloading time. (Mechanism Lock)				3
• Exceeds Cassette loading/unloading time. (Cassette Lock)				
Tape Unloading (direction)			1	4
Tape Loading (direction)			2	4

Fig. 1-3



Mechanism position	EJECT		CASSETTE DOWN		STOP/ STBY		REV		PLAY/CUE/ SLOW/STILL		BRAKE		FF/REW
position code	1	2	3	4	5	6	7	8	9	A	B	C	D

Fig. 1-4

Note:
When 1 to 4 listed in Lock code occurs, the VCR stops and all VCR function buttons except for power become non-operational.

3. Press any operation button except for POWER on either the unit, or the remote to detect that a key has been pressed.
   The 1st digit changes to "0" only when key is detected.

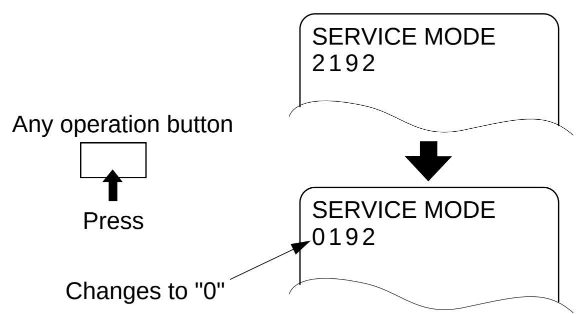


Fig. 1-5

SERVICE POSITION

The Basic Service Position does not require the use of Extension Cables. However, for more extensive servicing, Extension Cables should be used.

1. Basic Service Position

Service Position	Purpose
Service Position (1)	Mechanism check Mechanical adjustment Electrical adjustment
Service Position (2)	Main C.B.A. check TV Main C.B.A. check

CAUTION:

HOT CIRCUIT (Primary circuit) exists on the Main C.B.A. and TV Main C.B.A.
Use extreme care to prevent accidental shock when servicing.

Note:
When disassembling/assembling, refer to "Disassembly/ Assembly Procedures of Cabinet" section.

Service Position (1)

1. Remove Rear Cover, VCR Unit, (Stereo Amp C.B.A.: **Model K**), and Top Shield Plate Ass'y.
2. Then, place VCR Unit and (Stereo Amp C.B.A.: **Model K**) as shown.

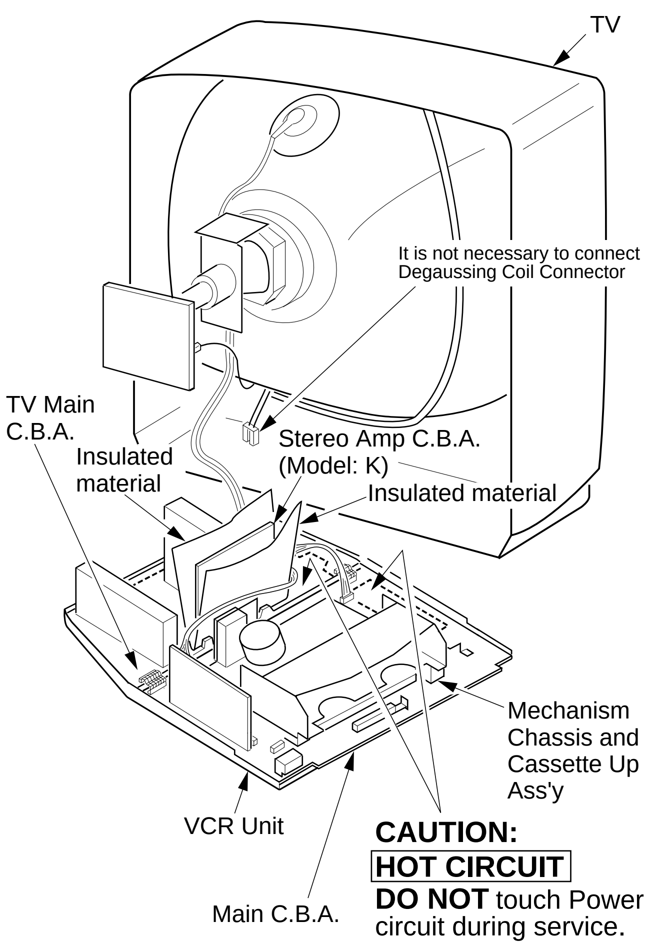


Fig. 2-1

Service Position (2)

1. Remove Rear Cover, VCR Unit, (Stereo Amp C.B.A.: **Model K**), and Top Shield Plate Ass'y.
2. Place VCR Unit and (Stereo Amp C.B.A.: **Model K**) as shown.
   In order to stabilize VCR Unit, place it on a slanted support, such as a loose-leaf binder etc.

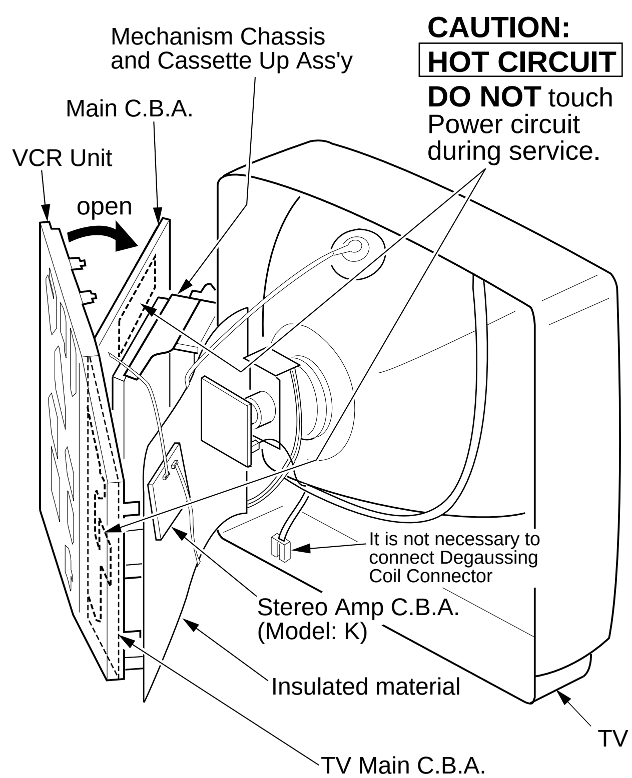


Fig. 2-2

2. Service Position with Extension Cable Kit

In Service Position with Extension Cable Kit, mechanism check from the Bottom Side of Mechanism Chassis and Capstan Stator Unit (Capstan Motor Drive, Loading Motor Drive Circuit) check with power on condition can be performed.

Service Position

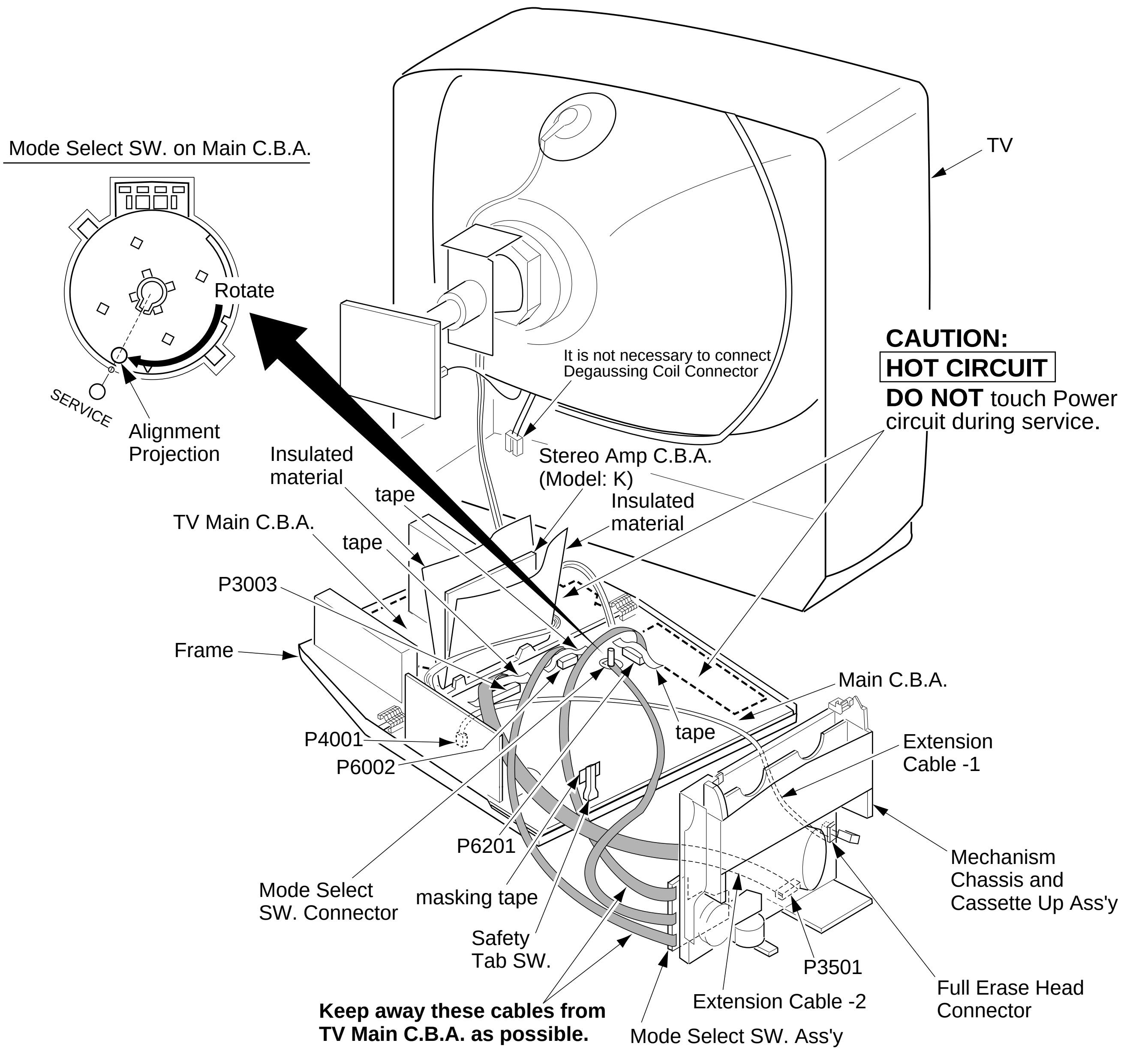


Fig. 2-3

CAUTION:

HOT CIRCUIT (Primary circuit) exists on the Main C.B.A. and TV Main C.B.A.
Use extreme care to prevent accidental shock when servicing.

Note:
When disassembling/assembling, refer to "Disassembly/Assembly Procedures of Cabinet" section.

Extension Cable Kit (VUZS0002)

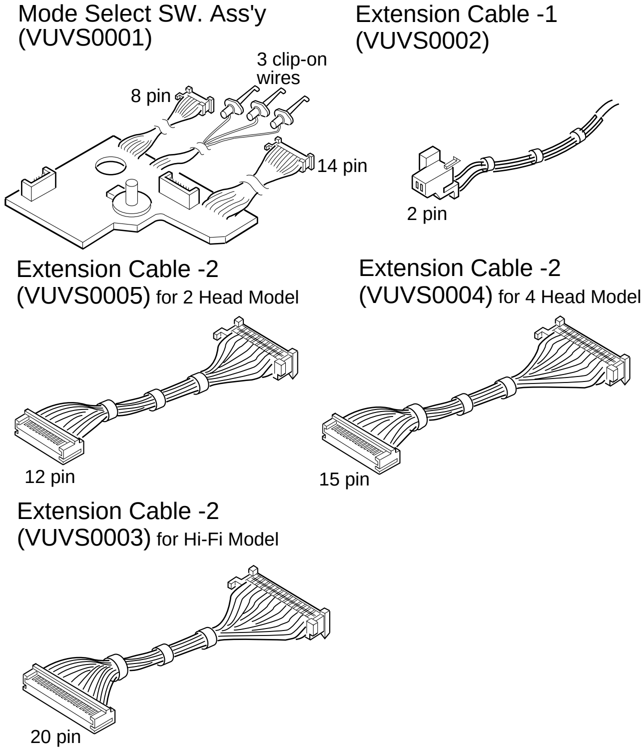


Fig. 2-4

Note:
3 types of Extension Cable -2 are included in this kit. Since there is a difference in the number of P3501 Head Amp C.B.A. pins between 2 Head, 4 Head, and Hi-Fi models, be sure to use the proper cable.

How to place the unit into Service Position with Extension Cables

1. Remove Rear Cover, VCR Unit, (Stereo Amp C.B.A.: **Model K**), Top Shield Plate Ass'y, Mechanism Chassis, and Cassette Up Ass'y.
2. Connect the Extension Cables as follows:

- Extension Cable -1: Full Erase Head Connector on the Mechanism Chassis Unit ~ P4001 on the Main C.B.A.
  Note: No change in performance if pins are reversed.
- Extension Cable -2: P3501 on the Head Amp C.B.A. ~ P3003 on the Main C.B.A.
- Mode Select SW. Ass'y: a) 3 Clip-on Wires ~ Test Points on the Main C.B.A.

Red Wire	~ TP6021
Orange Wire	~ TP6022
Yellow Wire	~ TP6023

  b) 8 Pin Connector ~ P6002 on the Main C.B.A.

  c) 14 Pin Connector ~ P6201 on the Main C.B.A.

  d) Set Mode Select SW. on the Mode Select SW. Ass'y to EJECT position and install onto Mechanism Chassis

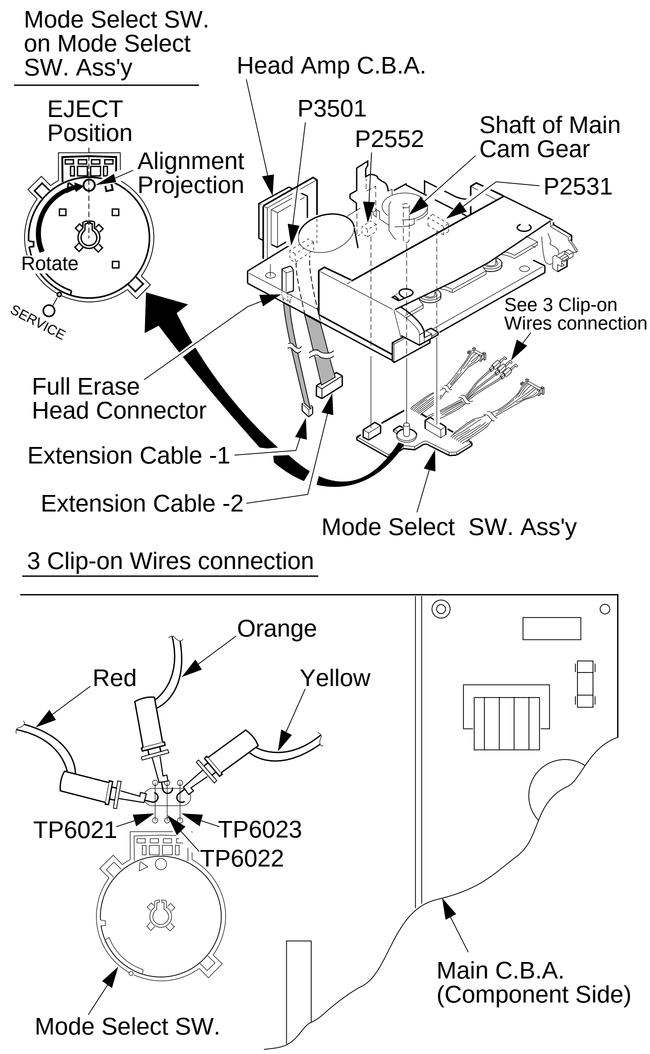


Fig. 2-5

3. Place the VCR Unit and (Stereo Amp C.B.A.: **Model K**) as shown.
4. Secure the Extension Cables with tape as shown. When recording, cover the Safety Tab SW. with masking tape to turn this SW. on.
   Note:
   To avoid damaging the connectors on Main C.B.A., it is necessary to secure connectors with tape as shown.
5. Set Mode Select SW. on the Main C.B.A. to Service Position.
6. Plug the AC plug into an AC outlet.
7. Insert a cassette.
   The power comes on, the tape is fully loaded, and the unit goes into the STOP Mode.
8. Place a jumper between TP6001 and GND to place the unit in Service Mode.
9. Check and/or repair the unit.
10. Press the STOP/EJECT button to eject the cassette.

Note:
When inserting a cassette again, remove the jumper between TP6001 and GND and insert the cassette. Then, reconnect the jumper.

11. After servicing, remove the jumper between TP6001 and GND to release the unit from Service Mode.

CAUTION:

HOT CIRCUIT (Primary circuit) exists on the Main C.B.A. and TV Main C.B.A.
Use extreme care to prevent accidental shock when servicing.

Note:
When disassembling/assembling, refer to "Disassembly/ Assembly Procedures of Cabinet" section.

Service Position

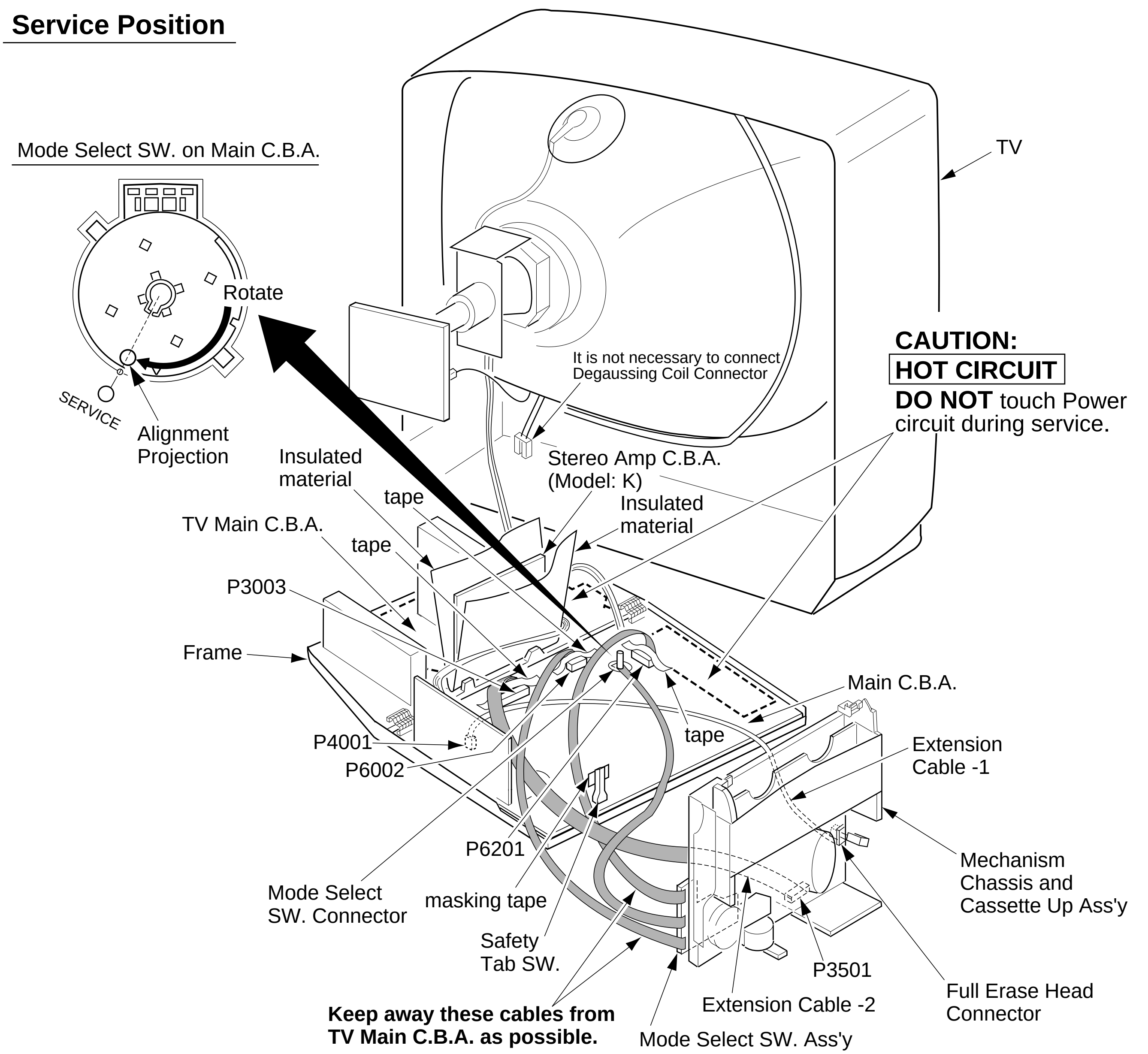


Fig. 2-6

HOT CIRCUIT

Primary circuit exists on the Main C.B.A. and TV Main C.B.A. This circuit is identified as "**HOT**" on the C.B.A. and in the Service Manual. Use extreme care to prevent accidental shock when servicing.

SERVICE MODE

In order to inhibit detection of the Supply & Takeup Photo Transistors, Reel Sensor, and Cylinder Lock, place a jumper between TP6001 and GND.

In this mode, Mechanism movement can be confirmed. When removing Cassette Up Ass'y, it can be confirmed without a cassette.

To release from this mode, remove the jumper between TP6001 and GND.

INSTALLATION OF VCR UNIT CAUTION

1. Swing the Cassette Door -Lid all the way open until the Cassette Door tab clears the Opener Lever.
2. Make sure that all guide tabs are aligned properly. Then, press the VCR Unit straight in.

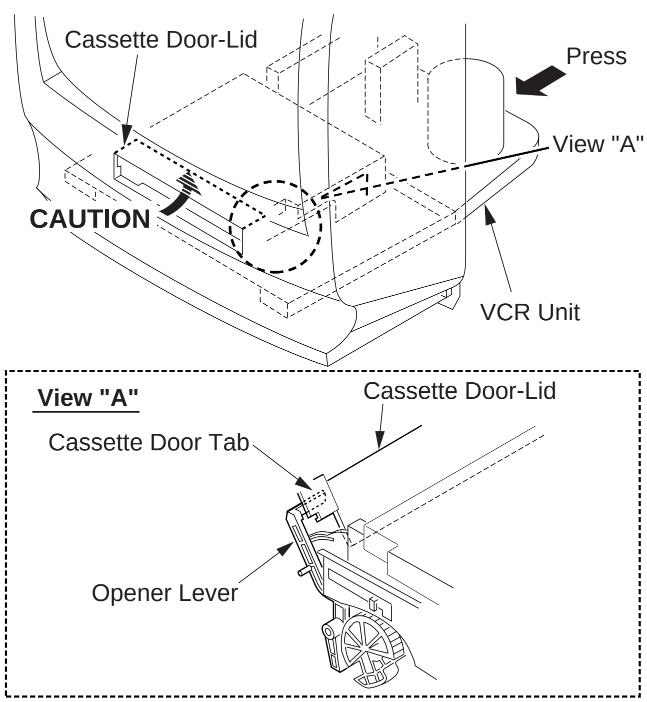


Fig. 4

HOW TO INITIALIZE MEMORY IC

After the Memory IC (IC6004) or MainC.B.A. is replaced, be sure to set the Default value to Memory IC as shown in "Memory IC Reference Table" below.

1. Press and hold STOP, FF, and VOL DOWN buttons on the unit together over 5 seconds with no cassette inserted. The adjustment overlay will appear to Enter EVR Adjustment mode.

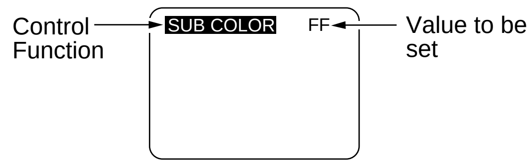


Fig. 3-1

2. Set the Default value of all Control functions using a remote control as shown in "Memory IC Reference Table" below.

   Note:
   For Selecting Control functions and setting Default value, refer to "How to Enter EVR Adjustment Mode" and "How to Enter EVR PG Shifter Adjustment Mode" in Electrical Adjustment procedures.

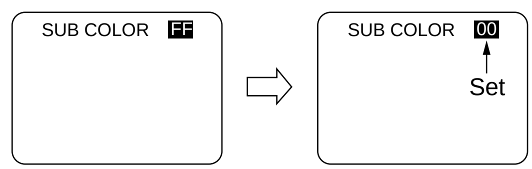


Fig. 3-2

3. Press and hold STOP, FF, and VOL DOWN buttons on the unit together over 5 seconds again or press the POWER button OFF to release EVR Adjustment Mode.
   The Default value will be written to Memory IC (IC6004).
4. Perform all EVR Adjustments. (Refer to "EVR Adjustment with the Remote Control" in Electrical Adjustment procedures.)

Memory IC Reference Table

Control functions	Address	Range	Default
SUB COLOR	00	C0 – FF, 00 – 3F	**00**
SUB TINT	01	E0 – FF, 00 – 1F	**00**
SUB BRIGHT	02	C0 – FF, 00 – 3F	**F0**
CONTRAST	03	C1 – FF, 00	**00**
SUB SHARPNESS	04	E0 – FF, 00 – 1F	**F0**
R CUT -OFF	05	00 – 7F	**1E**
G CUT -OFF	06	00 – FF	**3C**
B CUT -OFF	07	00 – FF	**3C**
G DRIVE	08	00 – 7F	**40**
B DRIVE	09	00 – 7F	**40**
SUB CONTRAST	0A	00 – 0F	**06**
H CENTER	0B	00 – 0F	**08**
V POSITION	0C	00 – 06	**00**
V SIZE	0D	00 – 7F	**40**
DOT CLOCK	0E	00 – 7F	**34**
ANR CTL	10	00 – EF	**87**
PICTURE CTL	11	00 – EF	**84**
VV COLOR	12	C0 – FF, 00 – 3F	**00**
VV TINT	13	E0 – FF, 00 – 1F	**00**
VV SHARPNESS	14	E0 – FF, 00 – 1F	**E8**
PG SHIFTER	15	01 – FD	**80**

Note:
Address is not displayed on the TV screen.
Other Addresses except above are not used.

METHOD FOR LOADING/ UNLOADING OF MECHANISM

(Manual Method)

Turn the Main Cam Gear counterclockwise (for loading) or clockwise (for unloading) using needlenose pliers etc.

Note:
Do not use this method if Mechanism is jammed or locked.

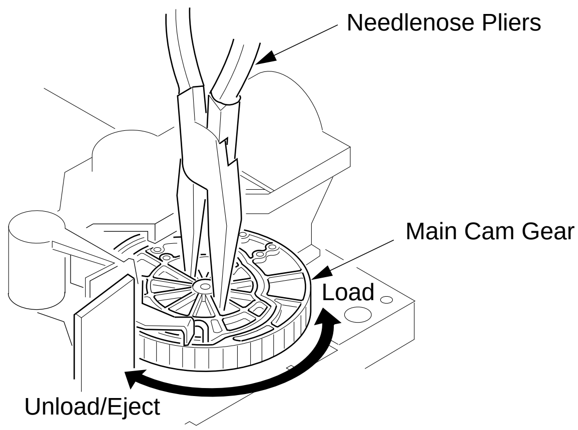


Fig. 5-1

(Electrical Method)

Remove the solder as shown and apply +10.0 VDC Power Supply (DC + to Portion "a," DC - to Portion "c").

Note:
Be careful not to let the DC Power Supply Unit GND contact the chassis GND. This may damage the Loading Motor Drive IC (IC 2501).
Be sure to apply DC + to Portion "a" of Motor P.C.B.
If DC + is applied to Portion "b", the Loading Motor Drive IC (IC2501) may be damaged.

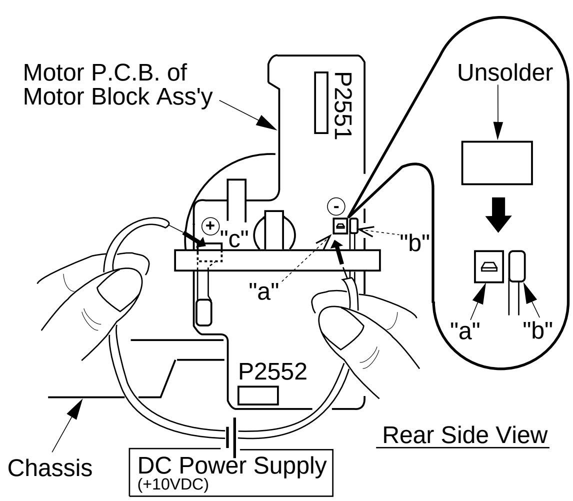


Fig. 5-2

Note:
Do not forget to solder Portions "a" and "b" after loading/ unloading operation is completed.

When loading without a cassette, press Portion "a" on both sides of the Holder Unit of Cassette Up Ass'y so that the Levers clear the Tabs and Holes.

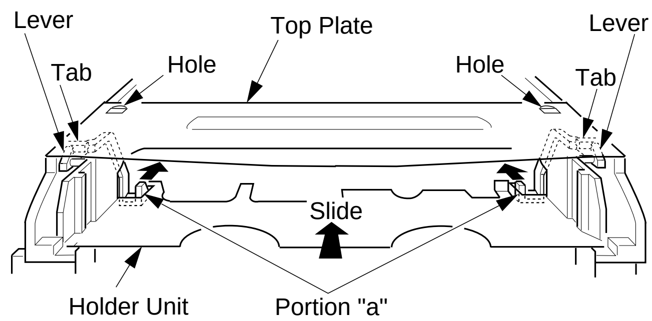


Fig. 5-3

HOW TO REMOVE A JAMMED TAPE

Manual Method

When a tape jam is encountered, check the tape loading condition and use the following procedure to remove a tape jam.

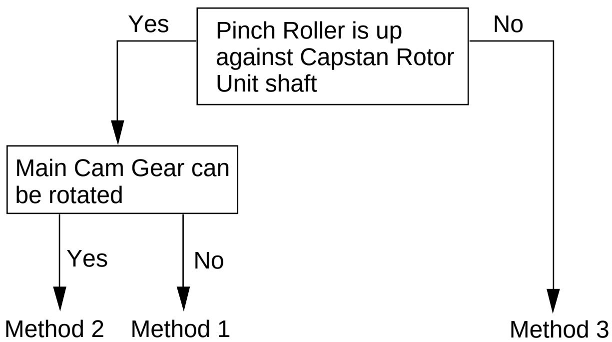


Fig. 6-1

Method -1:

1. While releasing 2 Locking Tabs (A) of Opener Piece, pull the Opener Piece up as far as you can.
2. Move the pin of Pinch Arm Unit out of the groove of the Main Cam Gear so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.

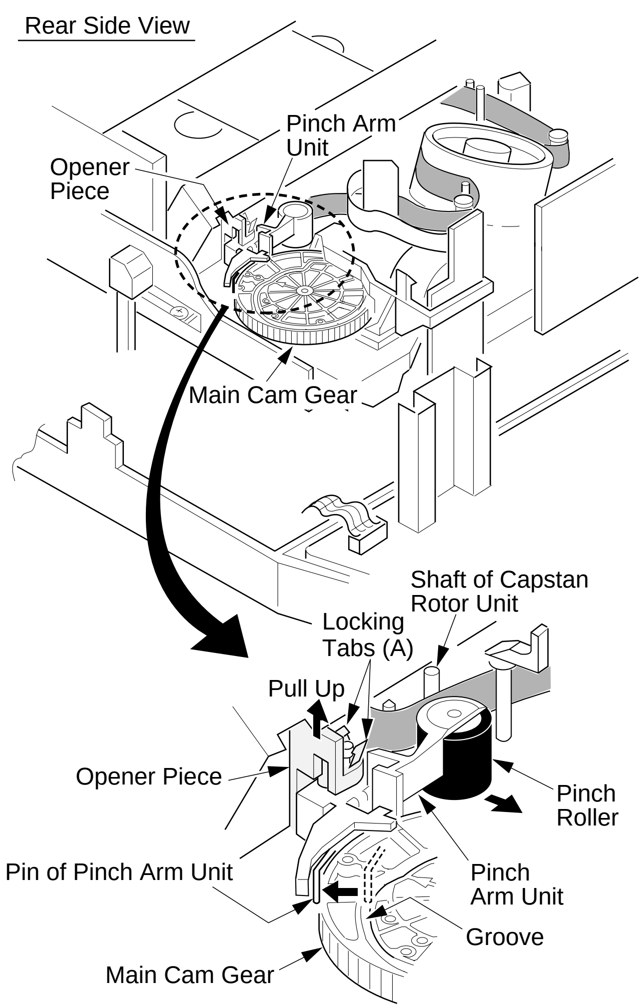


Fig. 6-2

3. Remove the tape from the tape path.
4. Rewind the tape into the cassette by rotating the Center Clutch Unit counterclockwise.
5. Unhook Spring (A) of the Drive Rack Unit.
6. Remove Screw (A).
7. Lift the Drive Rack Unit up so that the slot clears the guide tab. While pulling the Drive Rack Unit out far enough so that it clears the Drive Rack Arm, slide the Drive Rack Unit as indicated by the arrow to remove the cassette tape from the Cassette Up Ass'y.
8. Check the cause of mechanical trouble and repair.

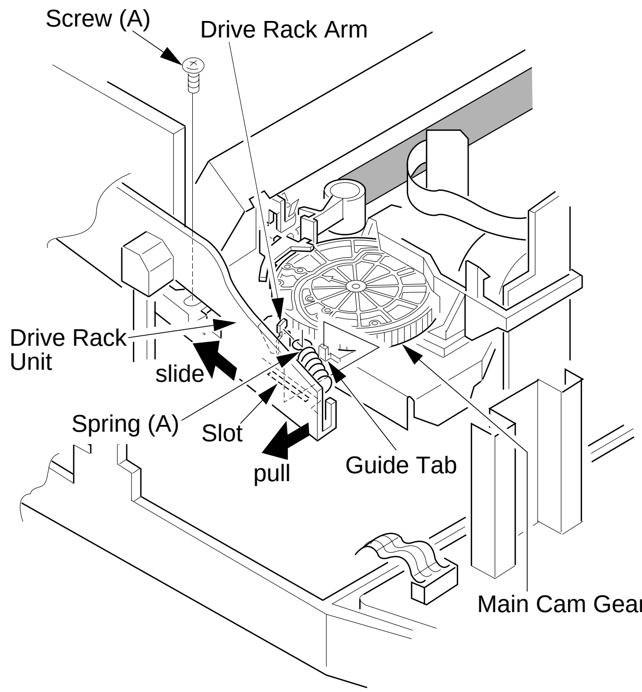


Fig. 6-3

Method -2:

1. Rotate Main Cam Gear clockwise with needlenose pliers, etc. so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.
2. Perform Step 3 through Step 8 of Method -1.

Method -3:

1. Perform Step 3 through Step 8 of Method -1.

Note:

After repairing mechanical trouble, make sure that all gear alignments are correct, especially the Wiper Arm Unit and Drive Rack Unit of Cassette Up Ass'y. (Refer to "**EJECT** Position confirmation" in Disassembly/Assembly Procedures of Mechanism.)

Electrical Method

Electrical method can only be performed when the mechanism is moved by rotating the Main Cam Gear.

CAUTION:
If loading does not start in approx. 2 seconds after DC Power Supply is applied, DO NOT continue to apply DC Power Supply. Instead, perform "Manual Method."

Method -1:

1. Remove the solder as shown and apply +10.0 VDC Power Supply (DC + to Portion "a," DC - to Portion "c").
2. When the Loading Posts reach the fully unloaded position, remove the Power Supply.

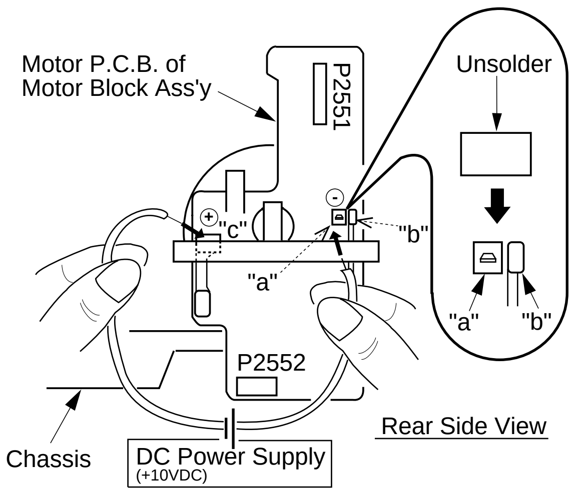


Fig. 7-1

Note:
Be careful not to let the DC Power Supply Unit GND contact the chassis GND. This may damage the Loading Motor Drive IC (IC 2501).
Be sure to apply DC + to Portion "a" of Motor P.C.B.
If DC + is applied to Portion "b", the Loading Motor Drive IC (IC2501) may be damaged.

3. Rewind the tape into the cassette by turning the Center Clutch Unit counterclockwise.
4. Eject the cassette by applying +10.0VDC Power Supply again.
5. After completing the removal procedure, solder Portion "a" and Portion "b."

Method -2:

1. Locate the Jumper (J6004) on the Audio Amp Section of the Main C.B.A. and cut it near the center.

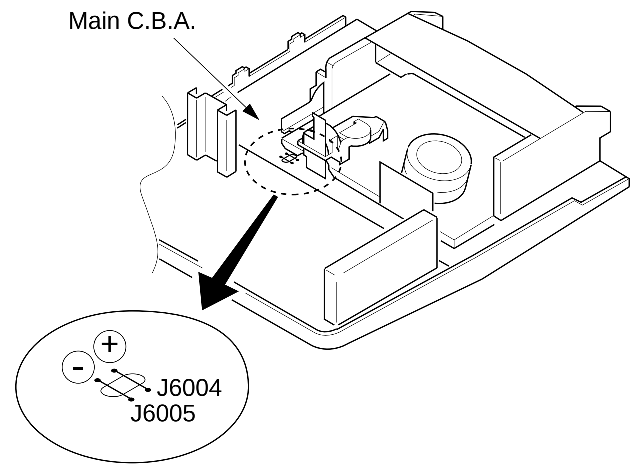


Fig. 7-2

2. Apply +10.0VDC Power Supply to the jumpers. When the Loading Posts reach the fully unloaded position, remove the Power Supply.

Note:
Be careful not to let the DC Power Supply Unit GND contact the chassis GND. This may damage the Loading Motor Drive IC (IC 2501).
Be sure to apply DC + to Portion "a" of J6004.
If DC + is applied to Portion "b" of J6004, the Loading Motor Drive IC (IC2501) may be damaged.

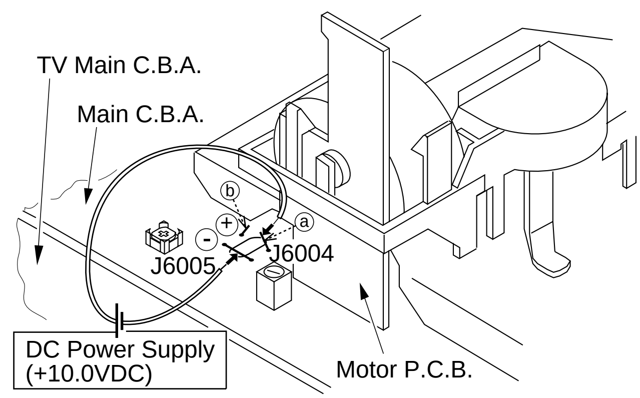


Fig. 7-3

3. Rewind the tape into the cassette by turning the Center Clutch Unit counterclockwise.
4. Eject the cassette by applying +10.0VDC Power Supply again.
5. After completing the removal procedure, resolder Jumper (J6004).

WIRE AND LEAD POSITION DIAGRAM

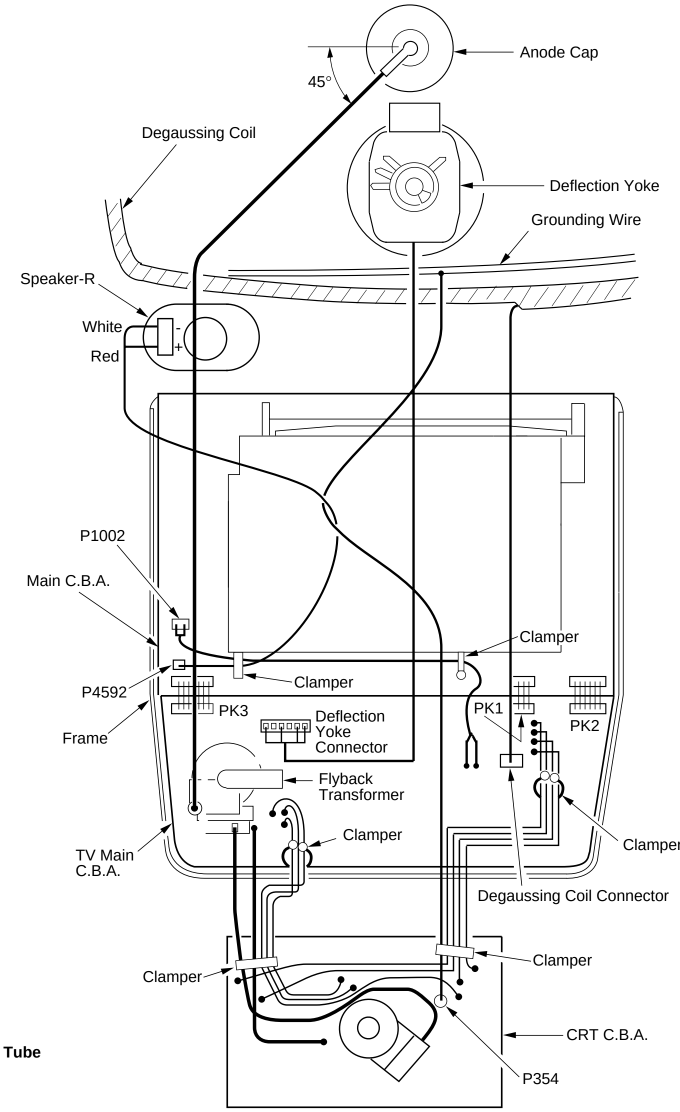
(Model : A, B, C, D, E, F)

After servicing, make sure that all wires, leads, and clampers are placed in their original position. It is important for the best operation of the unit.

Note:

No lead wires or flat cables should touch any heating parts or the Heat Sink Plate.
Use extreme care especially for followings.

- **Anode Lead:**
  DO NOT touch the Picture Tube.
- **Speaker Connector Leads:**
  DO NOT touch Power circuit on Main C.B.A.
- **P1002 Connector Leads:**
  DO NOT touch C805.
- **Deflection Yoke Connector Leads and CRT Leads:**
  DO NOT touch Heat Sink Plate.



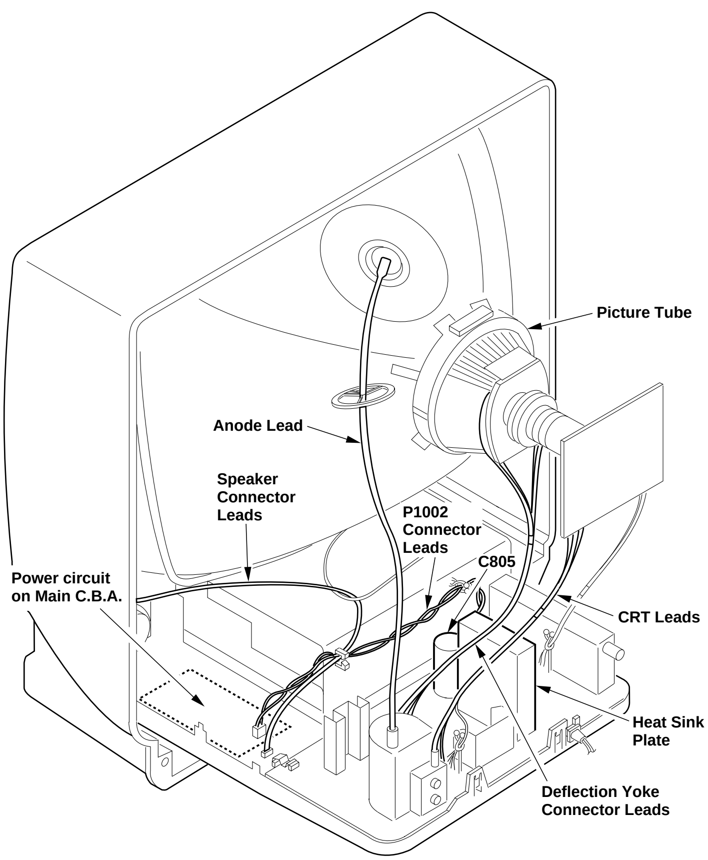


Fig. 8-1

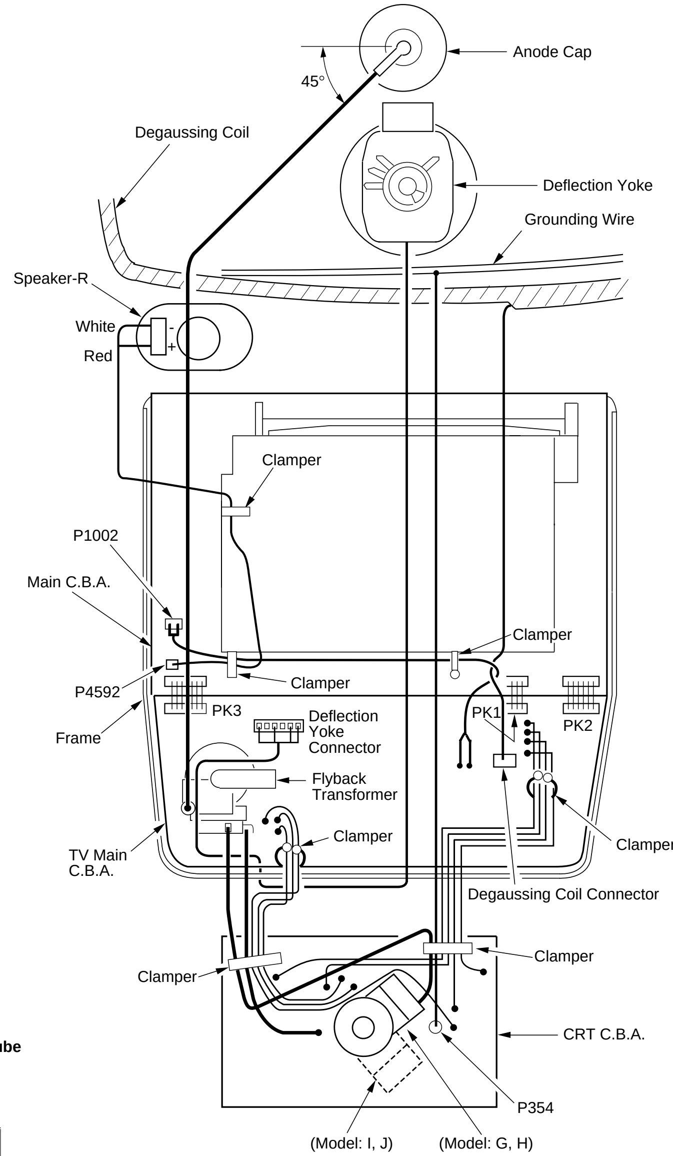
(Model : G, H, I, J)

After servicing, make sure that all wires, leads, and clampers are placed in their original position. It is important for the best operation of the unit.

Note:

No lead wires or flat cables should touch any heating parts or the Heat Sink Plate.
Use extreme care especially for followings.

- **Anode Lead:**
  DO NOT touch the Picture Tube.
- **Speaker Connector Leads:**
  DO NOT touch Power circuit on Main C.B.A.
- **P1002 Connector Leads:**
  DO NOT touch C805.
- **Deflection Yoke Connector Leads and CRT Leads:**
  DO NOT touch Heat Sink Plate.



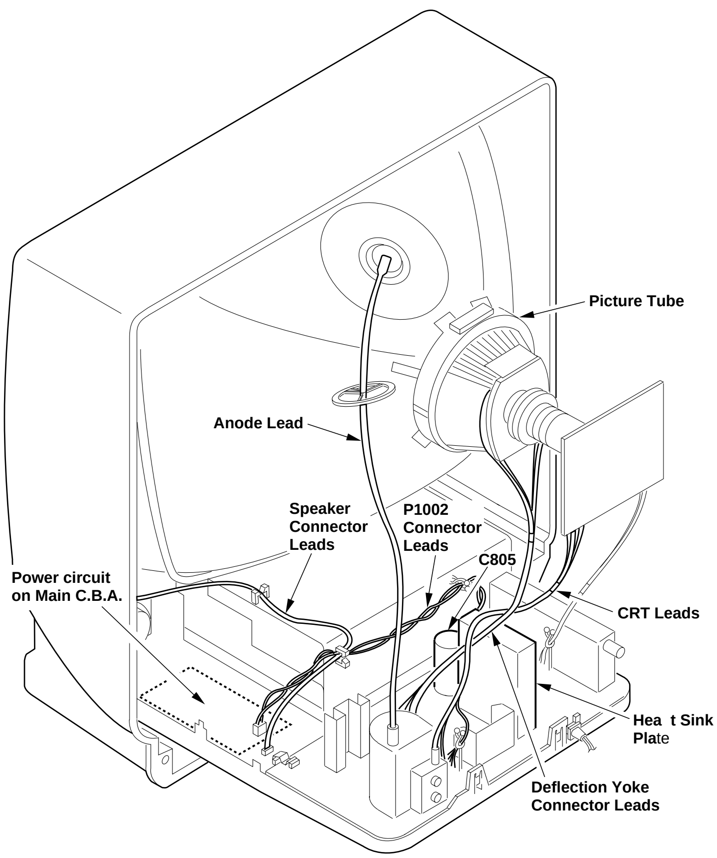


Fig. 8-2

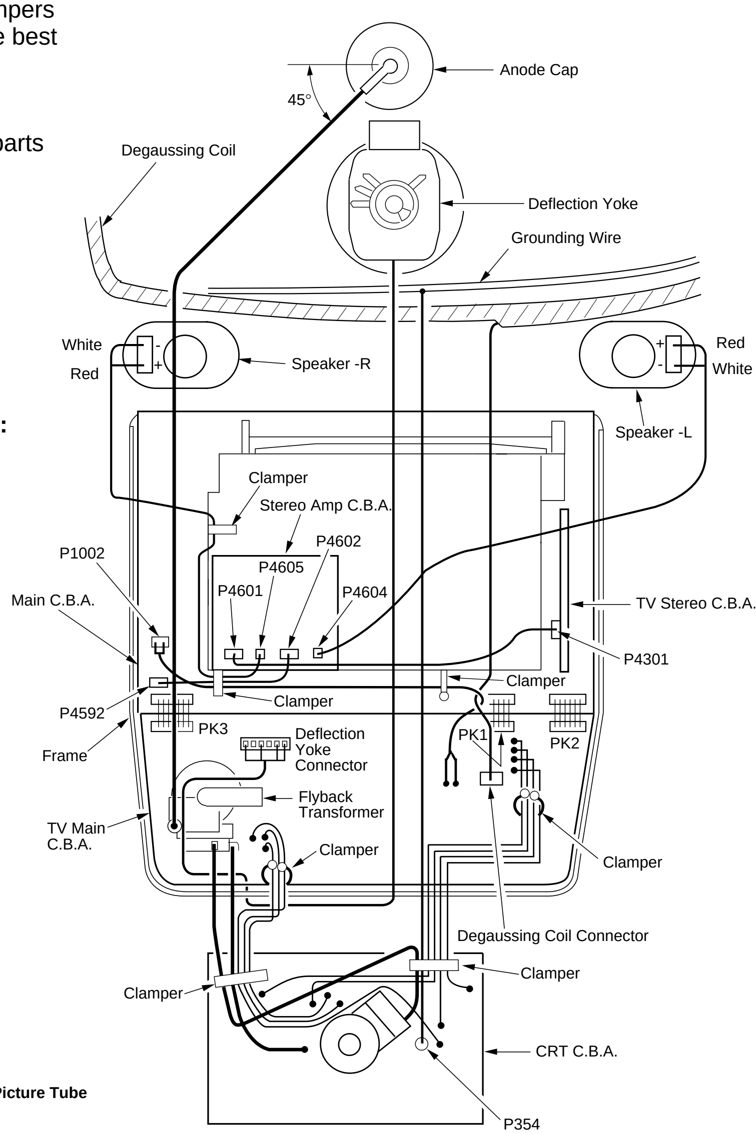
(Model : K)

After servicing, make sure that all wires, leads, and clampers are placed in their original position. It is important for the best operation of the unit.

Note:

No lead wires or flat cables should touch any heating parts or the Heat Sink Plate.
Use extreme care especially for followings.

- **Anode Lead:**
  DO NOT touch the Picture Tube.
- **Speaker Connector Leads:**
  DO NOT touch Power circuit on Main C.B.A.
- **P1002 Connector Leads:**
  DO NOT touch C805.
- **Deflection Yoke Connector Leads and CRT Leads:**
  DO NOT touch Heat Sink Plate.



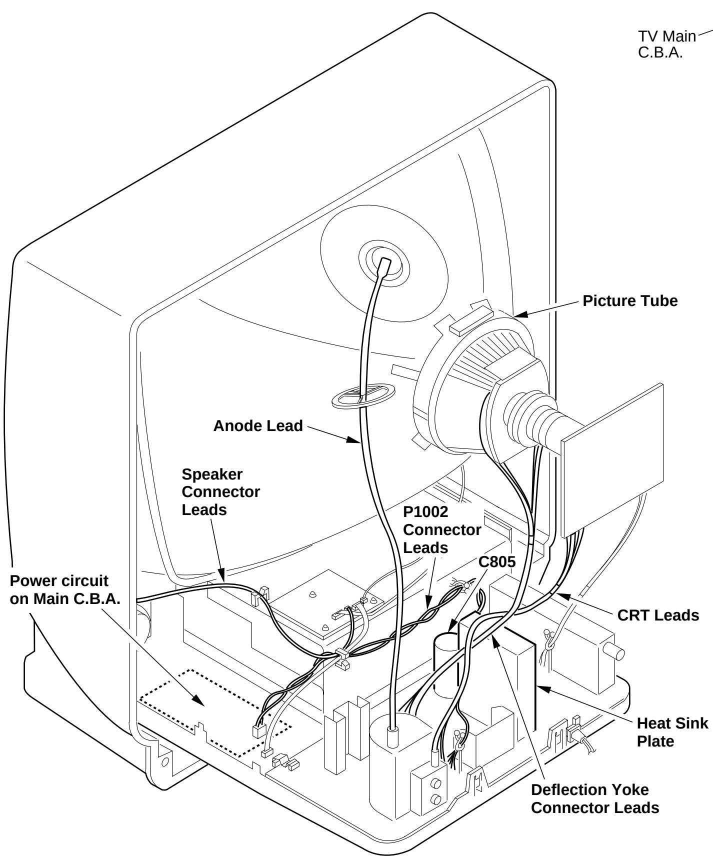


Fig. 8-3

DEFEATING THE AUTO TRACKING

To defeat the Auto Tracking Function, place the instrument in the STOP mode and place a jumper between TP6003 and TP6009 on the Main C.B.A. The tracking will be placed in the neutral position.

HOW TO SET TRACKING TO THE NEUTRAL POSITION

Ejecting the cassette tape and then reinserting it will reset the tracking to the Neutral position.

CYLINDER ROTATION IN STOP MODE

The cylinder will continue to rotate for approximately 5 minutes after the STOP button is pressed in Play mode etc. Eject the tape in order to stop the cylinder.

BLACK SCREWS ON THE CHASSIS

Black Screws are used on the Mechanism Chassis to identify screws that require adjustment.

HOW TO RESET ALL COMBINATION VCR MEMORY FUNCTIONS

To reset (clear) the select language, channel auto set and set clock functions to their initial power on condition (power on, **no** cassette inserted), hold down the PLAY and REWIND buttons on the unit together for more than 5 seconds.
Power will shut off.

HOW TO CONFIRM AUTO CLOCK SET FEATURE

1. Connect an RF cable from the output of one unit to the input of the test unit.
2. Select corresponding RF channels.
3. Playback a recording of P.B.S. channel including clock set data and confirm this feature.

VARIABLE VOLTAGE ISOLATION TRANSFORMER

An Isolation Transformer should always be used during the servicing of Combination VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect Combination VCR from being damaged by accidental shorting that may occur during servicing.
Also, when troubleshooting the above type of Power Supply Circuit, a variable isolation transformer is required in order to increase the input voltage slowly.

SPECIAL NOTE

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

REPLACEMENT PROCEDURE FOR LEADLESS (CHIP) COMPONENTS

The following procedures are recommended for the replacement of the leadless components used in this unit.

1. Preparation for replacement
   a. Soldering Iron
      Use a pencil-type soldering iron that uses less than 30 watts.
   b. Solder
      Eutectic Solder (Tin 63%, Lead 37%) is recommended.
   c. Soldering time
      Do not apply heat for more than 4 seconds.
   d. Preheating
      Leadless capacitor must be preheated before installation. – (266°F ~ 302°F)
      (130°C ~150°C) for about two minutes.

   Note:
   a. Leadless components must not be reused after removal.
   b. Excessive mechanical stress and rubbing of the component electrode must be avoided.

2. Removing the leadless component
   Grasp the leadless component body with tweezers and alternately apply heat to both electrodes. When the solder on both electrodes is melted, remove the leadless component with a twisting motion.

   Note:
   a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by a twisting action.
   b. Be careful not to break the copper foil on the printed circuit board.

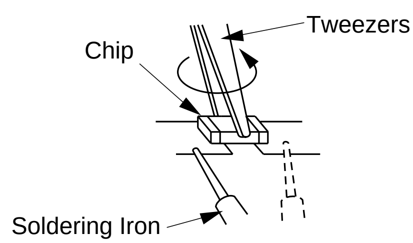


Fig. 9-1

3. Installing the leadless component
   a. Presolder the contact points on the circuit board.

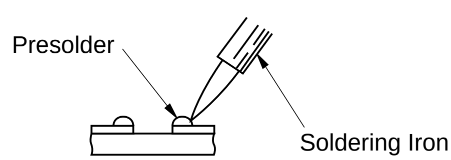


Fig. 9-2

b. Press the part downward with tweezers and solder both electrodes as shown below.

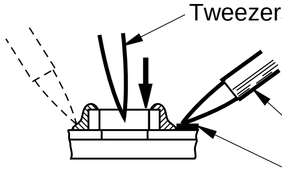


Fig. 9-3

Note:
Do not glue the replacement leadless component to the circuit board.

MODEL NO. IDENTIFICATION MARK

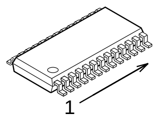
Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

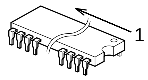
Note:
Refer to Item 3 of Schematic Diagram Notes of Schematic Diagram and Circuit Board Layout Notes, for mark "Z."

IC, TRANSISTOR AND CHIP PART INFORMATION

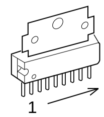
GENERAL C.B.A./ASS'Y PARTS



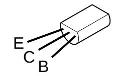
MN3885S, AN3361SB, AN3371SB, AN3845SC



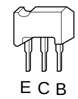
LC8643125F90, 24LC01B/PS1, TC4052BP, UPC4570C



AN5265, AN3809K

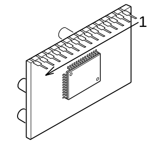


2SC945A, 2SA733, 2SC1994, 2SC1473-QNC

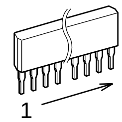


2SD1458, 2SD636, 2SB641, 2SD2259

TV STEREO C.B.A.

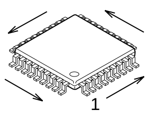


VCRS0216

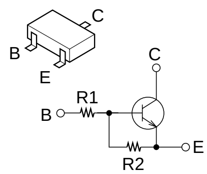


AN7420

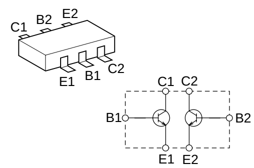
MAIN C.B.A.



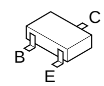
AN5367FB, AN3476FBP, D784927YG101



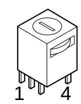
UN2212 (R1=22K, R2=22K), UN2215 (R1=10K, R2=OPEN)



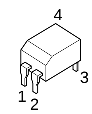
IMX1



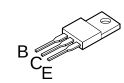
2SD601, 2SD601A, 2SB709, 2SB709A



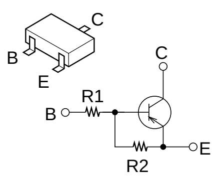
T4101, VLTS0304



ON3131-R.KT, ON3131-S.KT

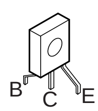


2SC3852, 2SC4533LP.KT, 2SC5130LF608

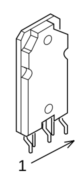


UN2112 (R1=22K, R2=22K), UN2115 (R1=10K, R2=OPEN), UN211L (R1=4.7K, R2=4.7K)

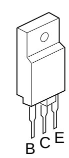
TV MAIN C.B.A.



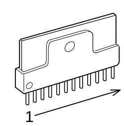
2SC3063LBKT



STR30130

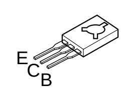


2SD2586LBK, 2SD2499LBK



LA7837

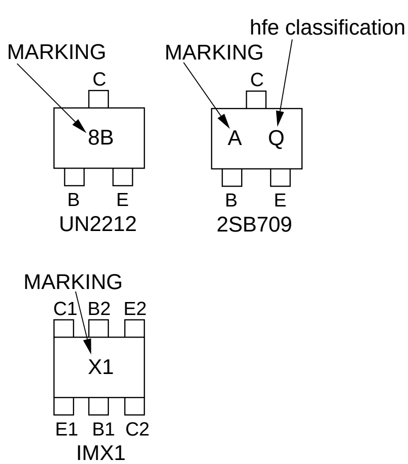
CRT C.B.A.



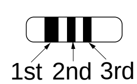
2SC3063

HOW TO READ THE IDENTIFICATION MARK OF CHIP COMPONENTS.

MARKING	PART NO.	MARKING	PART NO.
A	2SB709	6B	UN2112
B	2SB709A	6E	UN2115
N9	MA372J	6Q	UN211L
X1	IMX1	8B	UN2212
Y	2SD601	8E	UN2215
Z	2SD601A		



HOW TO READ THE VALUES OF THE CYLINDRICAL TYPE CHIP COMPONENTS.



The widest color band must be read first for value.

(a) RESISTOR

There are two types (ERD10LLJ... and ERD10TLJ...) of chip parts.

1) ERD10LLJ : Refer to above type.
2) ERD10TLJ : The narrow color band must be read first for value.

If this part is included in the parts list, be sure that the color band is read properly when servicing.

(b) CAPACITOR

Because of the width of the color bands, the reading direction cannot be specified. However, the color band can be read on either side. Be sure to confirm the value using the schematic diagram.

CAUTION :

Once chip parts are removed, they must not be reused. Always use a new part when installing a chip part.

DISASSEMBLY/ASSEMBLY PROCEDURES

DISASSEMBLY/ASSEMBLY PROCEDURES OF CABINET

Disassembly Flowchart

Perform all disassembly procedures in the order described in the "Disassembly Flowchart" shown below. When reassembling, use the reverse procedure.

CAUTION:
Disconnect AC plug before disassembly.

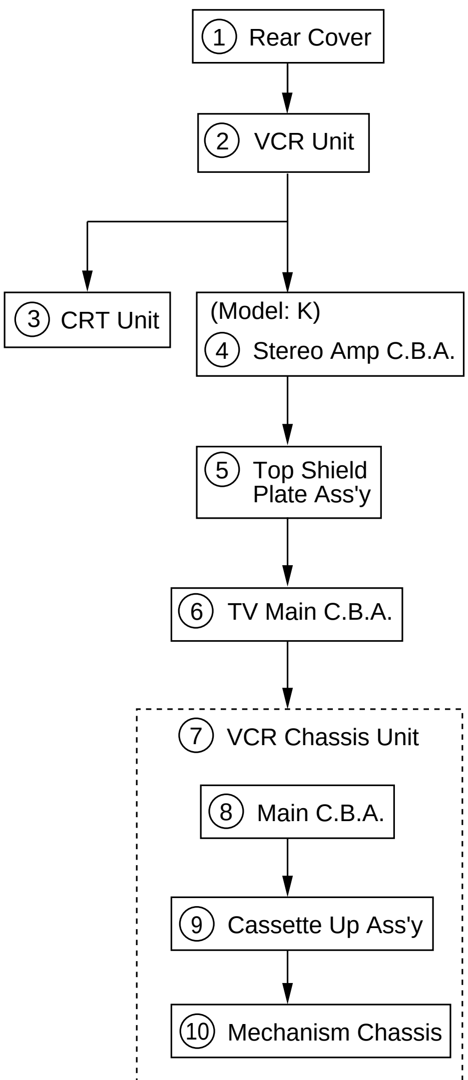


Fig. D1

Rear Cover

Disassembly Procedure

Remove 7 Screws (A). Then, pull the Rear Cover away.

(Model: A, B, C, D, E, F)

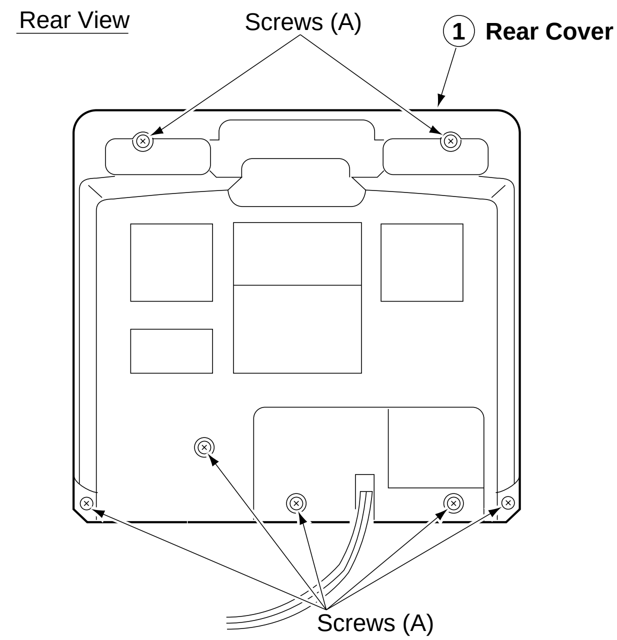


Fig. D2-1

(Model: G, H, I, J, K)

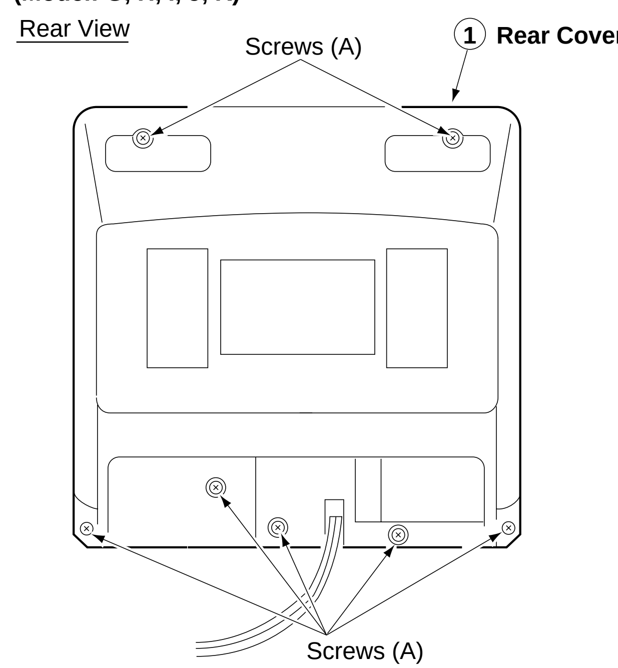


Fig. D2-2

VCR Unit

Disassembly Procedure

1. Discharge the Anode to the CRT Ground. Then, remove the Anode Cap.
2. Disconnect the Connector P354 from the CRT C.B.A.
3. Carefully pull out the CRT C.B.A. from the CRT Unit.
4. Disconnect the Deflection Yoke Connector and the Degaussing Coil Connector from the TV Main C.B.A.
5. **(Model : A, B, C, D, E, F, G, H, I, J)**
   Disconnect the Connector P4592 on the Main C.B.A. and remove the leads from the clampers.

   (Model : K)
   Disconnect 2 Connectors P4604 and P4605 on the Stereo Amp C.B.A. and remove the leads from the clampers.

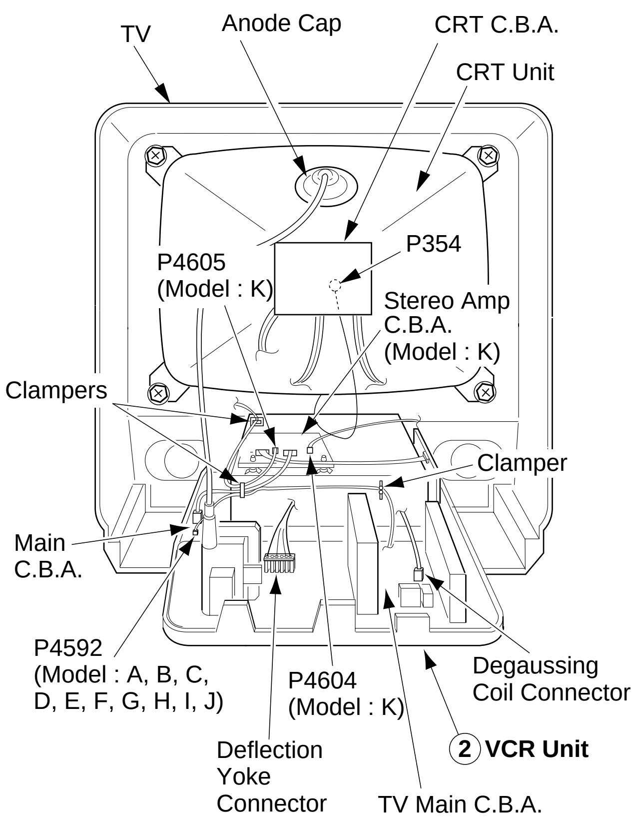


Fig. D3-1

6. **(Model: A, B, C, D, E ,F)**
   Slightly lift up the rear side of the VCR Unit to release 2 Tabs (B).
   (Model: G, H, I, J, K)
   Slightly lift up the rear side of the VCR Unit to release 4 Tabs (B) and (C).
7. Slide the VCR Unit out as far as it will go.
   Then, lift up the VCR Unit to release 3 Guide Tabs (A) and remove the VCR Unit all the way out from the TV cavity.

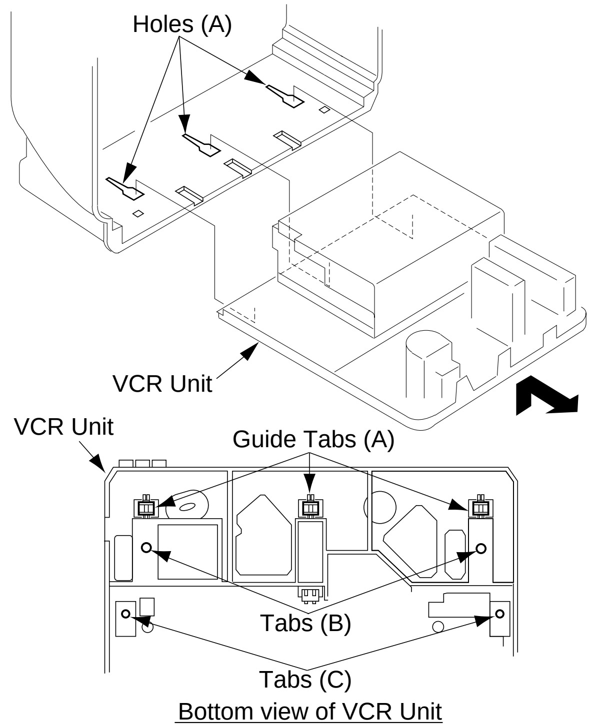


Fig. D3-2

Reassembly Notes

Installation of VCR Unit

CAUTION

1) When installing the VCR Unit, swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.
2) Make sure that all guide tabs are aligned properly. Then, press the VCR unit in.

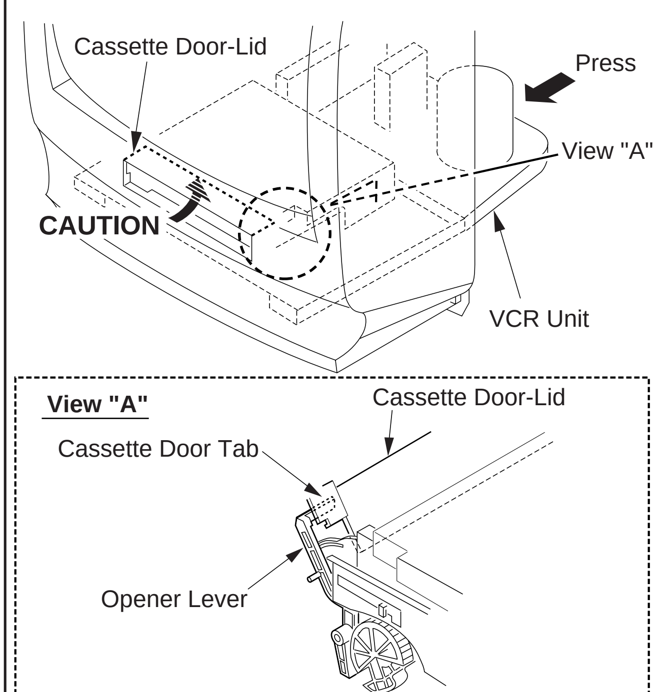


Fig. D3-3

CRT Unit

Disassembly Procedure

Remove 4 Screws with Washers (A). Then, pull out the CRT Unit.

Note:
Place the Unit face down on a soft cloth before removing the CRT Unit.

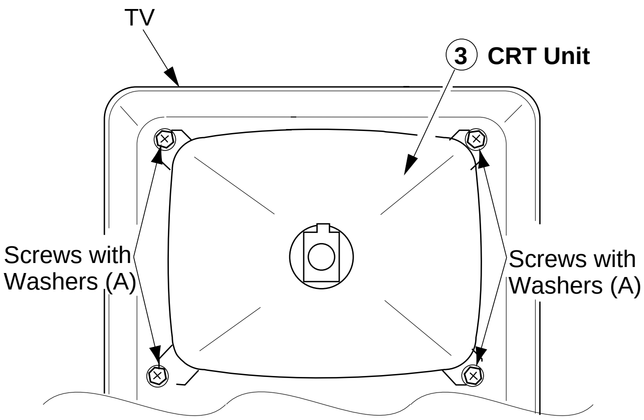


Fig. D4

Stereo Amp C.B.A. (Model: K)

Disassembly Procedure

1. Disconnect the Connector P4592 on the Main C.B.A. and remove the leads from the clamper.
2. Disconnect the Connector P4301 on the TV Stereo C.B.A.
3. Release 3 Clampers (A) on the Stereo Amp C.B.A. Then, remove the Stereo Amp C.B.A.

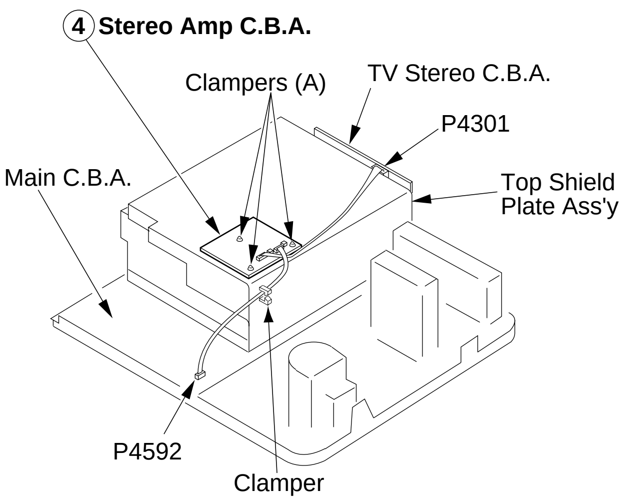


Fig. D5

Top Shield Plate Ass'y

Disassembly Procedure

1. Remove 2 Screws (B) and Screw with Washer (B).
2. Release the 2 Clampers (B) on the Top Shield Plate Ass'y and remove the leads from the clampers.
   Then, Remove the Top Shield Plate Ass'y.

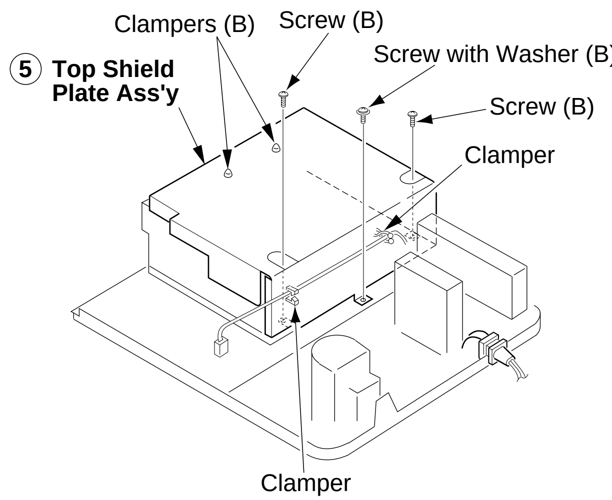


Fig. D6

TV Main C.B.A.

Disassembly Procedure

1. Disconnect Connector P1002 on the Main C.B.A.
2. Disconnect 3 Connectors PK1, PK2, and PK3 on the TV Main C.B.A.

   Note :
   When disconnecting or connecting 3 Connectors PK1, PK2, and PK3, take extreme care not to break them.

3. Remove the TV Main C.B.A. by releasing 2 Locking Tabs (B) and A/C Cord from the frame.

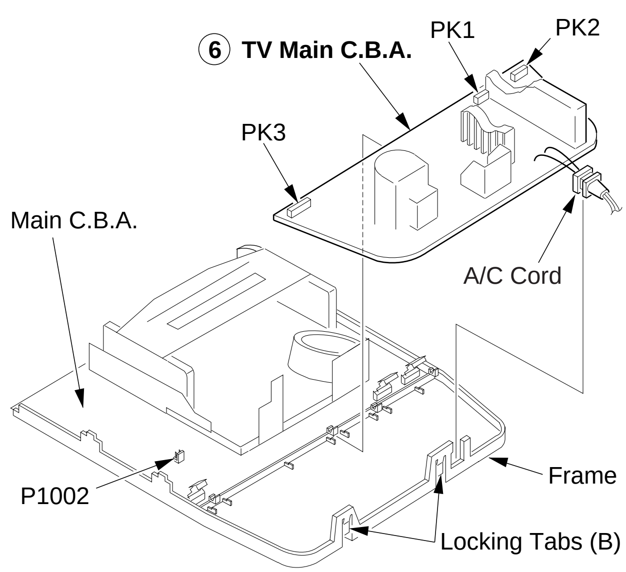


Fig. D7

VCR Chassis Unit

Disassembly Procedure

1. Slide the Holder Unit (refer to "Method for Loading/Unloading of Mechanism" in Service Notes) to gain access to 2 Screws (C) for removal.
2. **(Model: A, B, C, D, E, F)**
   Remove 3 Screws (D) and Screw (E).
   (Model: G, H, I, J, K)
   Remove 2 Screws (D) and Screw (E).
3. While pushing Locking Tab (C) outward and lift the VCR Chassis Unit out of the Frame.

Note:
Work carefully so as not to break tab.

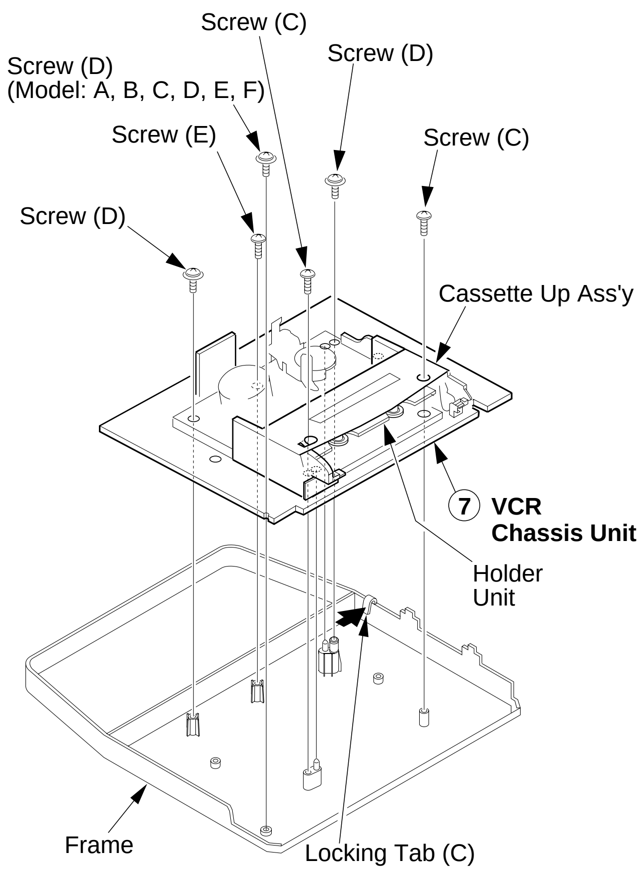


Fig. D8

Reassembly Notes

1. When installing 2 Screws (C), slide the Holder Unit (refer to "Method for Loading/Unloading of Mechanism" in Service Notes) to tighten screws. Then, slide it back to the **EJECT** Position.
   Make sure that Mechanism and Cassette Up Ass'y are in the **EJECT** Position. (Refer to "**EJECT** Position confirmation" in Disassembly/Assembly Procedures of Mechanism.)

Main C.B.A.

Disassembly Procedure

1. Disconnect 4 Connectors of P2531, P2552, P3501 and P4001.
2. Carefully lift the Mechanism Chassis and Cassette Up Ass'y straight out from the Main C.B.A.

Note:
Work carefully so as not to break Sensor LED when lifting the Mechanism Chassis and Cassette Up Ass'y.

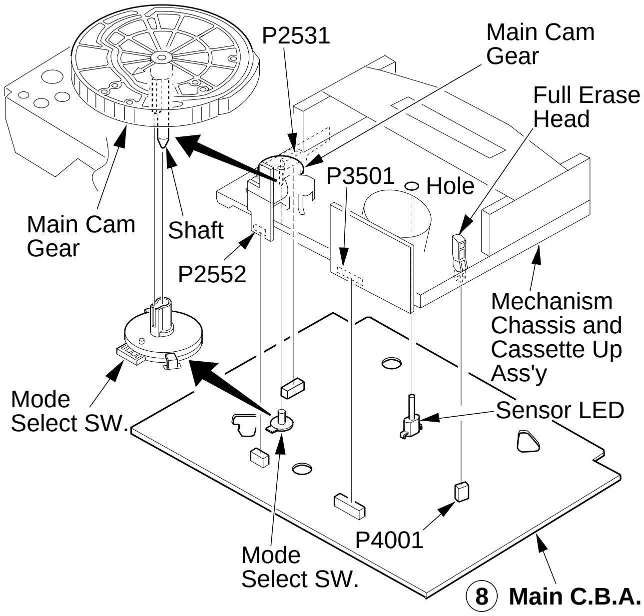


Fig. D9-1

Reassembly Notes

CAUTION

Installation of Mechanism Chassis and Cassette Up Ass'y onto Main C.B.A.

1) Make sure the Mode Select SW. on the Main C.B.A. is in **EJECT** position. If not, rotate the Mode Select SW. until the alignment projection is in the **EJECT** Position as shown below.

   Make sure the Mechanism and Cassette Up Ass'y are in the **EJECT** Position. (Refer to "**EJECT** Position confirmation" in Disassembly/Assembly Procedures of Mechanism.)

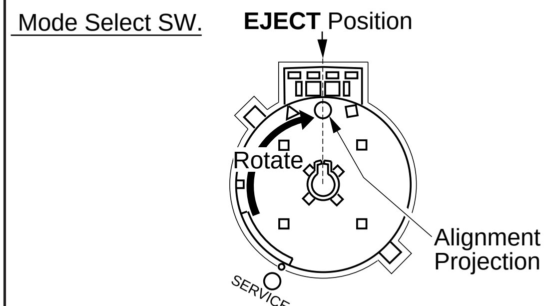


Fig. D9-2

2) Install the Mechanism Chassis and Cassette Up Ass'y straight onto the Main C.B.A. so that the Sensor LED clears the hole in the Mechanism Chassis and that 4 Connectors (P2531, P2552, P3501, and P4001) are aligned and seated securely.

Cassette Up Ass'y

Disassembly Procedure

1. Slide Holder Unit (refer to "Method for Loading/Unloading of Mechanism" in Service Notes) to gain access to 2 Screws (F) for removal.
2. Remove Screw (G).
3. Unhook Spring (A).
4. Slide the Cassette Up Ass'y towards the front to release Locking Tab (D). Then, lift it up and remove.

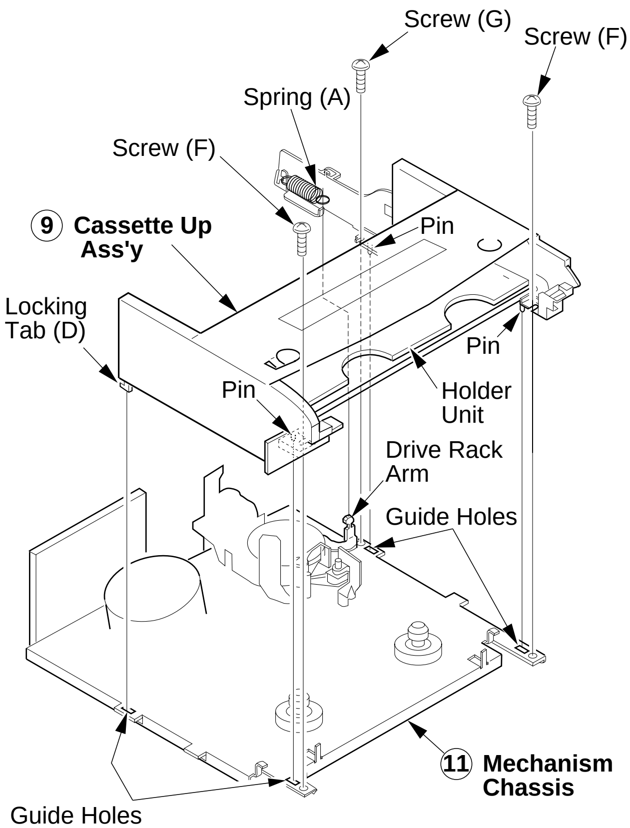


Fig. D10

Reassembly Notes

Installation of Cassette Up Ass'y

1) Confirm that the 3 pins and Locking Tab (D) under the Cassette Up Ass'y are in each of the 4 Guide Holes on the Mechanism Chassis when installing the Cassette Up Ass'y. Then, slide the Cassette Up Ass'y towards the back.
2) Slide Holder Unit (refer to "Method for Loading/Unloading of Mechanism" in Service Notes) to tighten 2 Screws (F) and Screw (G).
   Be careful not to tighten screws too much, or the Cassette Up Ass'y may be bent outward.
   Then, slide it back to the **EJECT** Position.
3) Hook Spring (A) to the Drive Rack Arm on the Mechanism Chassis.

DISASSEMBLY/ASSEMBLY PROCEDURES OF MECHANISM

Disassembly Method

This chart indicates Step/Location No. of Parts to be serviced and prior steps to gain access items to be serviced when disassembling.
When reassembling, perform the step(s) in the reverse order.

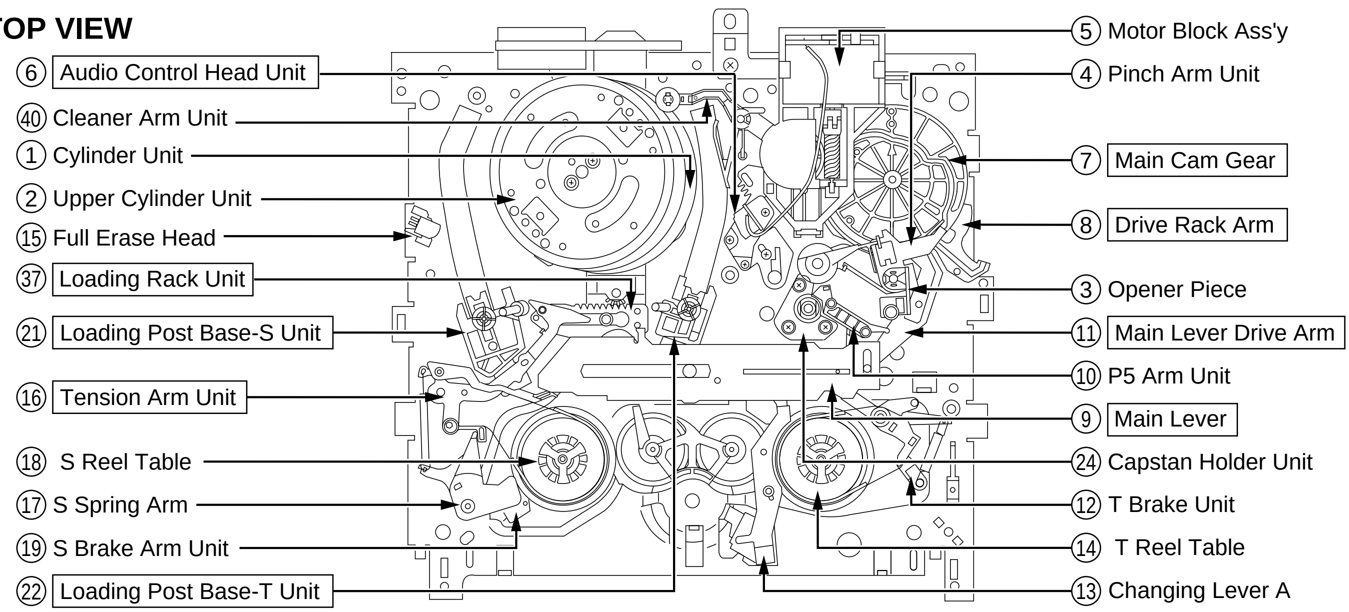
Step /Loc. No.	Part	Prior Step(s)	Step /Loc. No.	Part	Prior Step(s)	Step /Loc. No.	Part	Prior Step(s)	Step /Loc. No.	Part	Prior Step(s)
1	Cylinder Unit	------------	11	Main Lever Drive Arm	3, 4, 5, 7, 8, 9	21	Loading Post Base-S Unit	16	31	S Loading Arm Unit	30
2	Upper Cylinder Unit	------------	12	T Brake Unit	9	22	Loading Post Base-T Unit	9, 20	32	Center Clutch Unit	------------
3	Opener Piece	------------	13	Changing Lever A	9	23	Capstan Rotor Unit	------------	33	Changing Gear Spring	32
4	Pinch Arm Unit	3	14	T Reel Table	9, 12, 13	24	Capstan Holder Unit	23	34	Changing Gear	32, 33
5	Motor Block Ass'y	------------	15	Full Erase Head	------------	25	SS Brake Arm Unit	------------	35	Changing Lever-B	32, 33, 34
6	Audio Control Head Unit	5	16	Tension Arm Unit	------------	26	Junction C.B.A.	------------	36	Idler Arm Unit	32, 33, 34
7	Main Cam Gear	3, 4, 5	17	S Spring Arm	------------	27	Capstan Stator Unit	23, 25, 26	37	Loading Rack Unit	9, 30
8	Drive Rack Arm	3, 4, 5, 7	18	S Reel Table	16, 17	28	Sub Rotor	23, 25, 26, 27	38	Grounding Plate Unit	------------
9	Main Lever	------------	19	S Brake Arm Unit	9, 16, 17, 18	29	PCB Holder	23, 25, 26, 27	39	FG Head	------------
10	P5 Arm Unit	9	20	Main Lever Guide	9	30	T Loading Arm Unit	------------	40	Cleaner Arm Unit	------------

Step/Loc. No.: Order of steps in procedure. Part : Part to be removed or installed. Prior Step(s) : Steps to be completed prior to the current step.

Note: When the mechanical parts surrounded by rectangle are removed or replaced, be sure to perform necessary adjustment or alignment procedures according to the mechanical adjustment procedures section and disassembly/assembly procedures of mechanism section.

Perform all disassembly and alignments procedures in EJECT Position.

TOP VIEW



BOTTOM VIEW

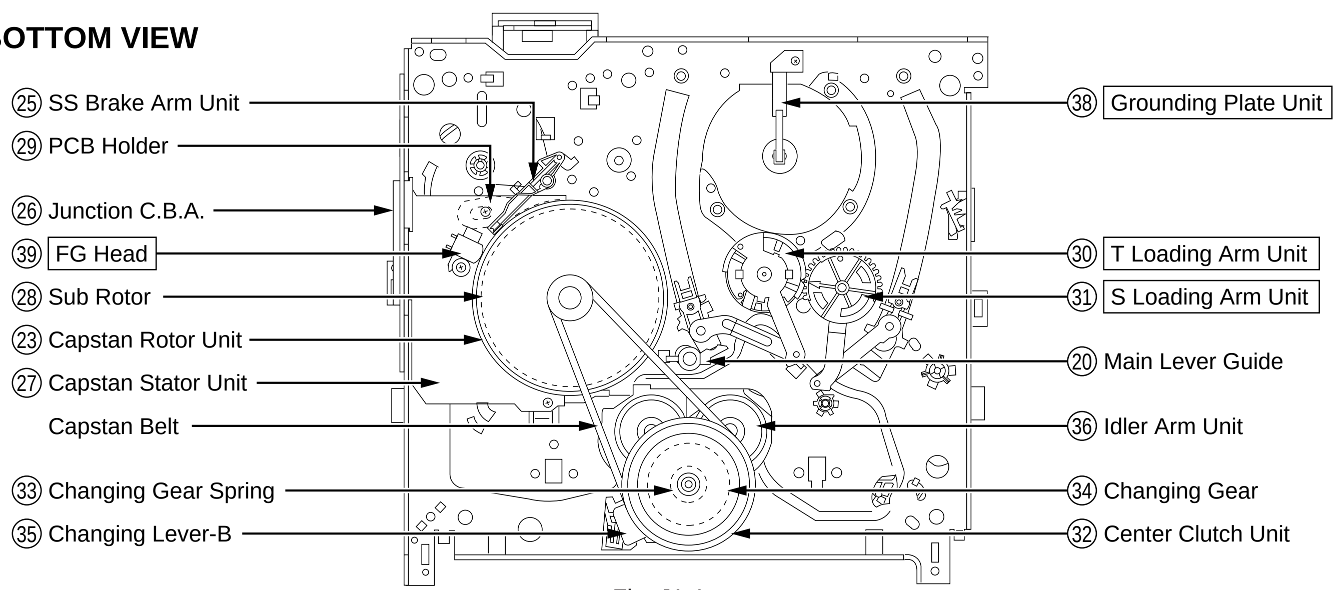


Fig. J1-1

EJECT Position Confirmation

Check the following alignment points to confirm that the Mechanism and Cassette Up Ass'y are in the **EJECT** Position from the top side.

(By using alignment points ※1 & ※2, it is possible to roughly confirm the S & T Loading Arm Units from the top side, even though they are located on the bottom side of the mechanism chassis.)

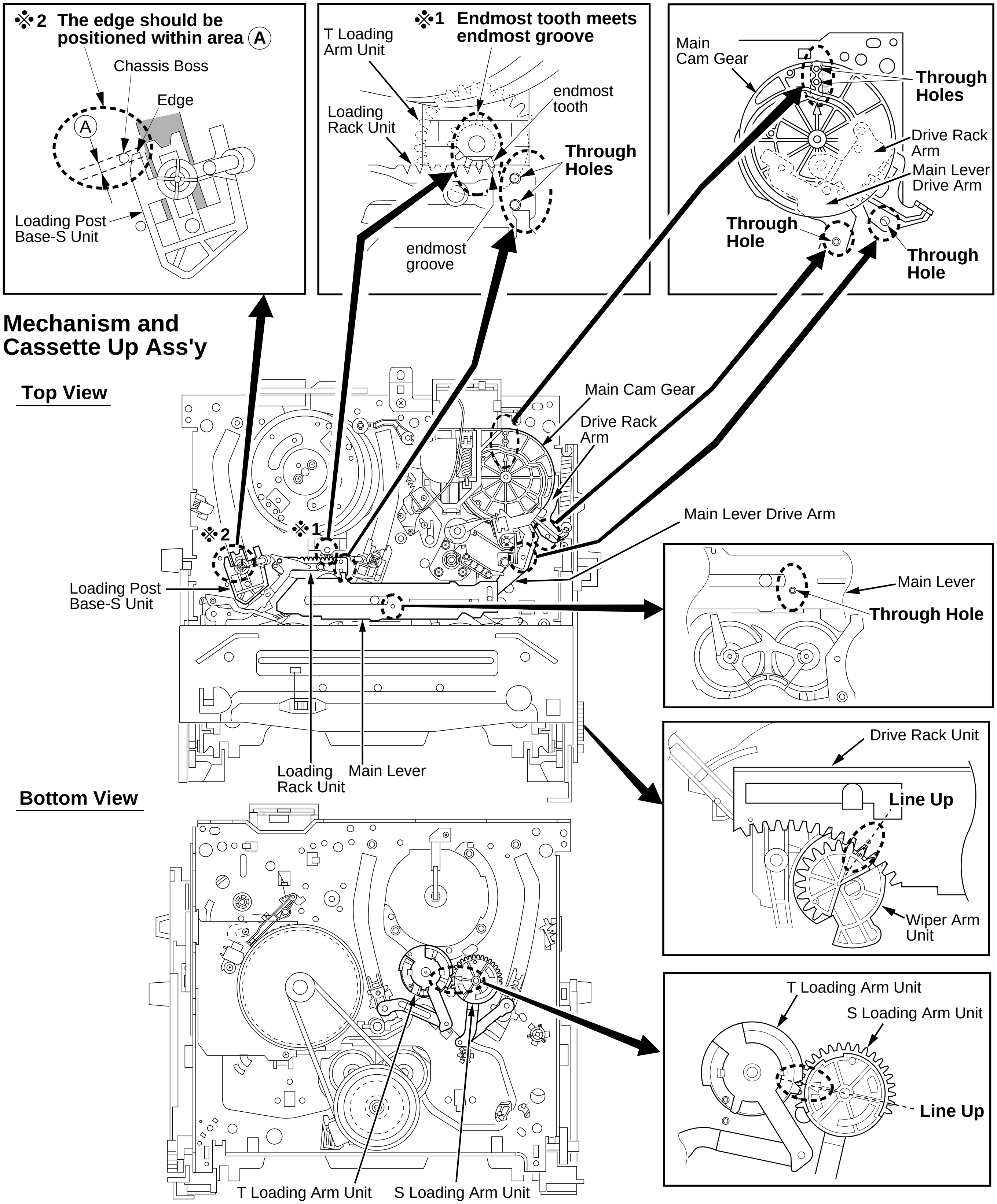


Fig. J1-2

Cylinder Unit

Disassembly Procedure

1. Remove 3 Screws (A) and 2 Screws with Washers (A). Then, lift the Cylinder Unit and the Head Amp C.B.A. out from the mechanism.
2. Unsolder P3502 and P3503. Then, remove the Head Amp C.B.A.

Note:

Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.

CAUTION:

When removing the Cylinder Unit, avoid touching IC2601 on the Head Amp C.B.A. because it is **HOT** during operation.

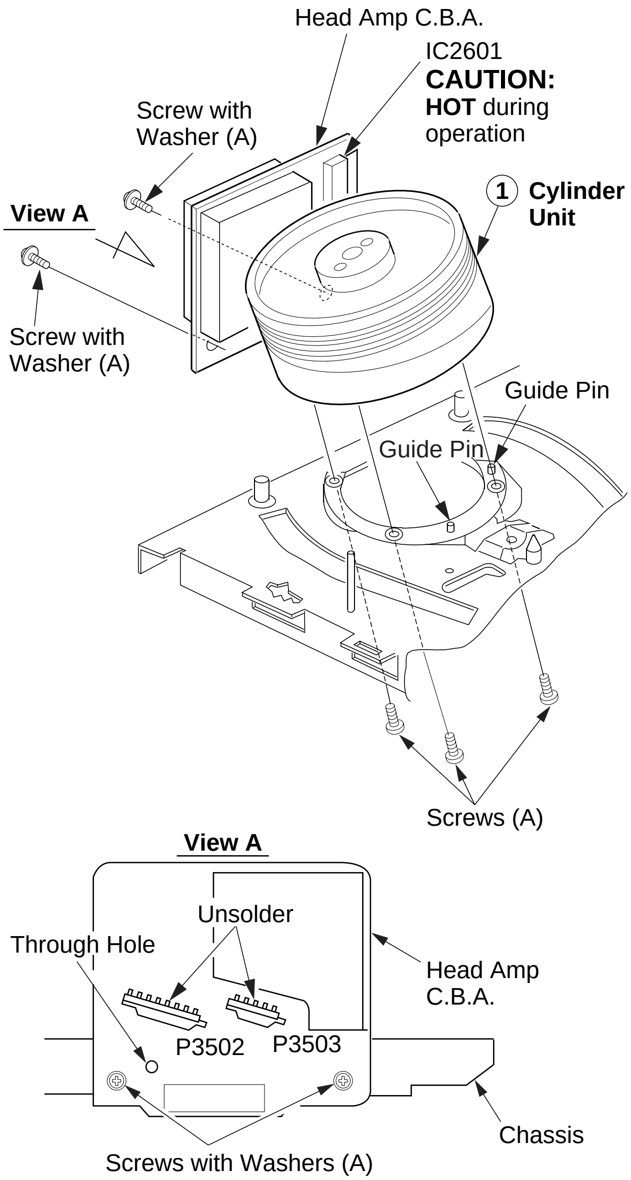


Fig. J2-1

Reassembly Notes

1. Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.
2. **Installation of Cylinder Unit**
   1) Install the Cylinder Unit so that the 2 holes on the lower surface of the Cylinder Unit fit over the 2 Guide Pins on the Cylinder Base and loosely secure it with 3 Screws (A).
   2) Install the Head Amp C.B.A. so that the hole on the Head Amp C.B.A. lines up with the hole on the chassis and secure it with 2 Screws with Washers (A).
   3) Position the Cylinder Unit so that foil patterns of connectors (P3502 and P3503) and Head Amp C.B.A. are aligned, and tighten 3 Screws (A).
   4) Solder connectors (P3502 and P3503).
3. **Adjustment of Grounding Plate Unit**
   1) After installing, make sure that the Grounding Plate Unit, on the bottom side of mechanism chassis, is positioned on the right side of the Cylinder shaft so that the center line of the plate is just less than 1.0 mm measured from the center of the Cylinder shaft.
   If required, adjust the plate position by loosening Black Screw (A).
   Never install the Grounding Plate Unit on the left side of the Cylinder shaft.
   Incorrect positioning will cause cylinder buzz.

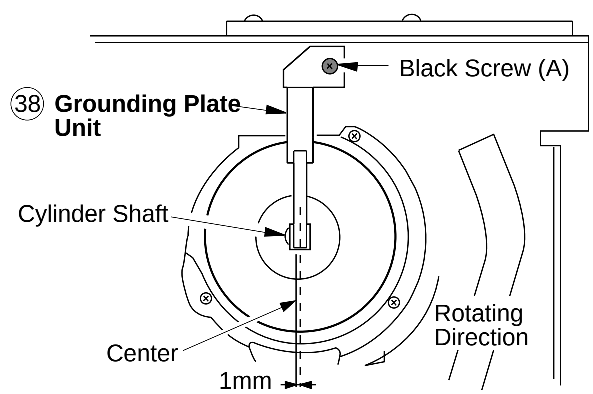


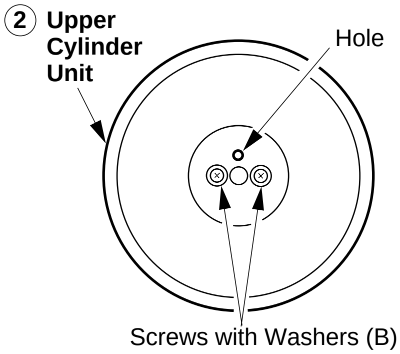
Fig. J2-2

   2) After installing, perform the "Tape Interchangeability Adjustment" procedures.

Upper Cylinder Unit

Disassembly Procedure

1. Remove 2 Screws with Washers (B).
2. Carefully lift the Upper Cylinder Unit from the shaft.



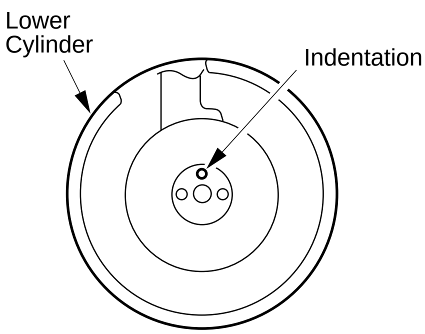


Fig. J3

Note:

Use extreme care when removing or replacing the Upper Cylinder Unit. Do not touch the Video Heads during servicing.

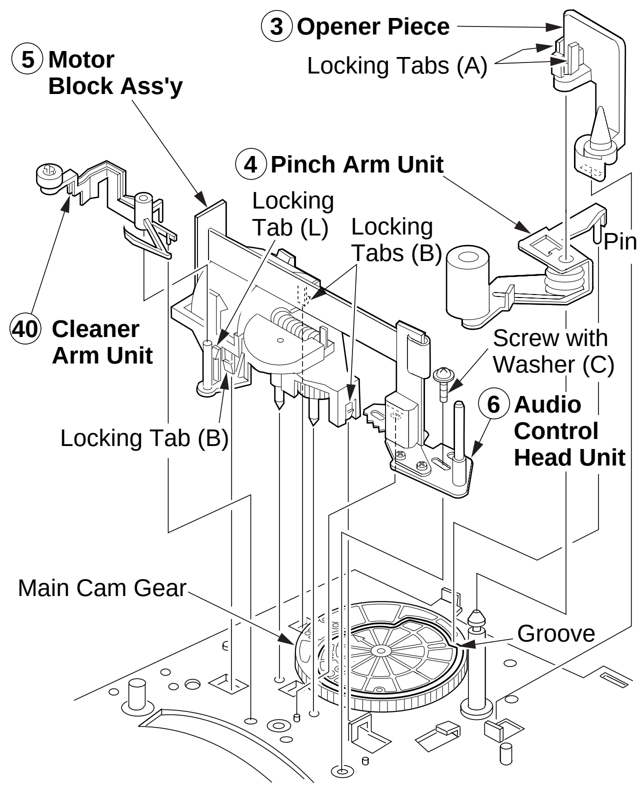
Reassembly Notes

1. Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.
2. **Alignment of Upper Cylinder Unit**
   1) When installing, make sure that the hole on the Upper Cylinder is aligned with the indentation on the Lower Cylinder.
   2) After installing, perform the "Tape Interchangeability Adjustment" procedures.

Opener Piece, Pinch Arm Unit, Motor Block Ass'y, Audio Control Head Unit, and Cleaner Arm Unit

Disassembly Procedure

1. Remove the Opener Piece by pulling it upward while releasing 2 Locking Tabs (A).
2. Pull up on the Pinch Arm Unit.
3. Release 3 Locking Tabs (B) and remove Screw with Washer (C). Then, remove the Motor Block Ass'y and Audio Control Head Unit.
4. Remove the Cleaner Arm Unit by pulling it upward while releasing Locking Tab (L).



Note:

Depending on the VCR model, there may or may not be a Cleaner Arm Unit.
Please refer to "Exploded Views" or "Replacement Parts List."

Fig. J4

Reassembly Notes

1. **Installation of Audio Control Head Unit**
   1) Install the Audio Control Head Unit before Motor Block Ass'y.
   2) After installing, perform the "Tape Interchangeability Adjustment" procedures.
2. **Installation of Pinch Arm Unit**
   1) Install the Pinch Arm Unit so that the Pin of Pinch Arm Unit fits in the groove of Main Cam Gear.

Main Cam Gear and Drive Rack Arm

Disassembly Procedure

1. Remove the Main Cam Push Nut. (Refer to Note.)
2. Pull up on the Main Cam Gear.
3. Turn the Drive Rack Arm fully counterclockwise as shown.
4. Pull up on the Drive Rack Arm.

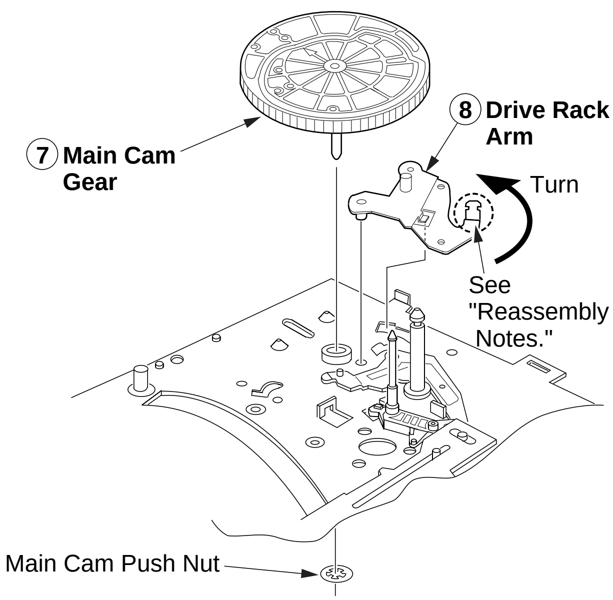


Fig. J5-1

Note:

When removing the Main Cam Push Nut, press the Main Cam Gear to make space between the Main Cam Push Nut and Bottom of Chassis. Then, remove the Main Cam Push Nut using a screwdriver etc.

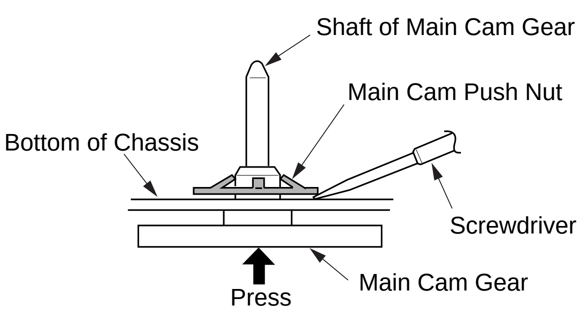


Fig. J5-2

Reassembly Notes

1. **Alignment of Main Cam Gear, Drive Rack Arm, and Main Lever Drive Arm**
   1) Confirm that the hole (C) on the Main Lever Drive Arm is aligned with the hole on chassis (Through hole (C)) as shown.
   2) Install the Drive Rack Arm so that the hole (A) is aligned with the hole on chassis (Through hole (A)) as shown.
   3) Install the Main Cam Gear so that the 2 holes (B) marked "E" are aligned with the hole on chassis (Through hole (B)) as shown. ("E" indicates the EJECT position.)

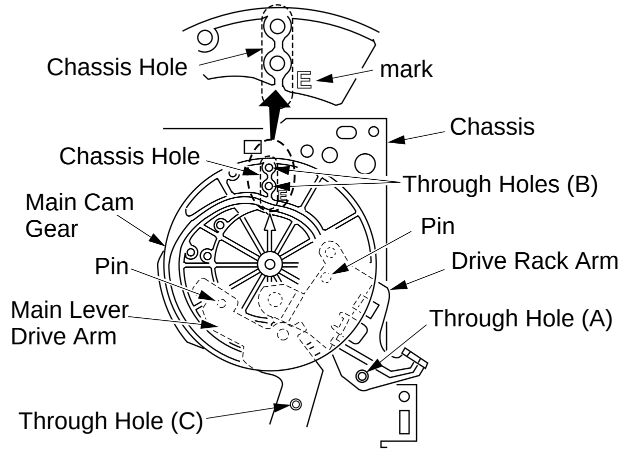


Fig. J5-3

2 . **Holes on Main Cam Gear**
   1) The holes on Main Cam Gear should be aligned with the hole on chassis in each mode (Through hole) as shown.

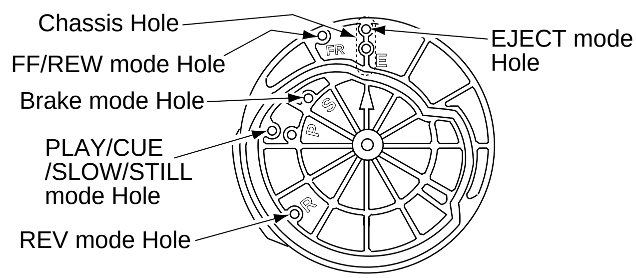


Fig. J5-4

3. **Installation of Main Cam Gear and Main Cam Push Nut**
   1) Position the chassis upside down and place a Support under the Main Cam Gear.
      Install the Main Cam Push Nut with Needlenose Pliers etc. so that it is flush with the chassis.

      There may be some slight scratches on the Shaft of Main Cam Gear, when removing the Main Cam Gear. In case that the Main Cam Gear can be installed securely without tottering, it is fine to use the one. If any tottering, replace a new one.

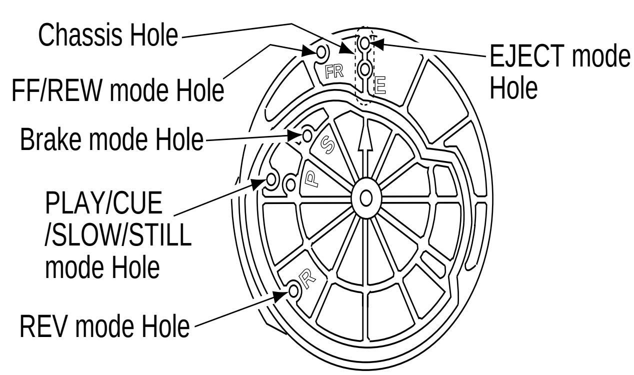


Fig. J5-5

4. The Main Cam Push Nut is not reusable. Install a new one.
5. Make sure to hook Spring (A) of the Cassette Up Ass'y to the Drive Rack Arm. Refer to "Cassette Up Ass'y" in "Disassembly/Assembly Procedures of Cabinet."

Main Lever

Disassembly Procedure

1. Release 2 Locking Tabs (C) and Locking Tab (D). Then, remove the Main Lever.

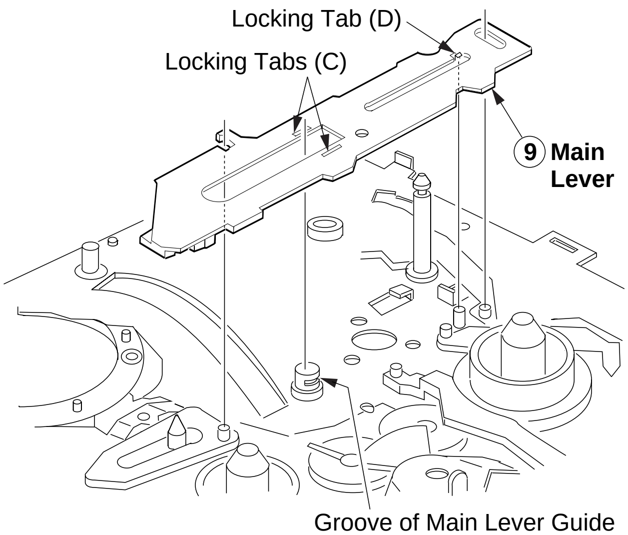


Fig. J6-1

Reassembly Notes

1. **Installation/Alignment of Main Lever**
   1) Make sure that the 2 holes of Loading Rack Unit are aligned with the holes on chassis (Through holes).
   2) Turn the P5 Arm Unit to the Capstan Rotor Unit Shaft side.
   3) Turn the T Brake Unit to the T Reel Table side.
   4) Position the Main Lever so that the Loading Rack Unit Pin fits in the niche of Main Lever.
      Confirm that pins and bosses are in the position and that the hole of Main Lever is aligned with the hole on chassis (Through hole) as shown. Then, install the Main Lever.
   5) Push down the Locking Tabs (C) to set in the groove of Main Lever Guide.

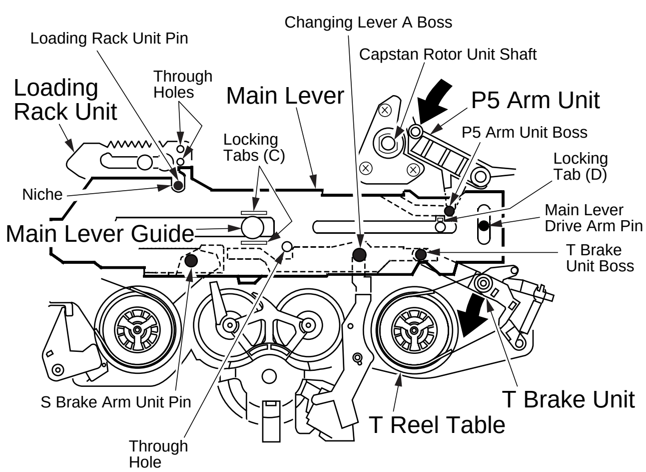


Fig. J6-2

P5 Arm Unit and Main Lever Drive Arm

Disassembly Procedure

1. Pull up on the P5 Arm Unit.
2. Turn the Main Lever Drive Arm fully counterclockwise as shown.
3. Pull up on the Main Lever Drive Arm.

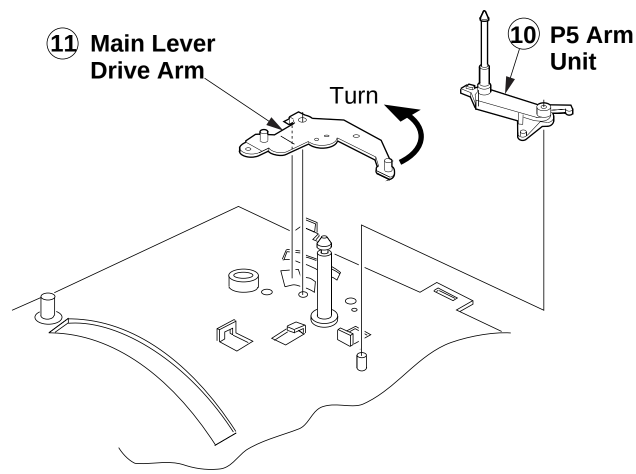


Fig. J7-1

Reassembly Notes

1. **Alignment of Main Lever Drive Arm**
   1) Install the Main Lever Drive Arm so that the hole (C) is aligned with the hole on the chassis Through hole (C)) as shown.

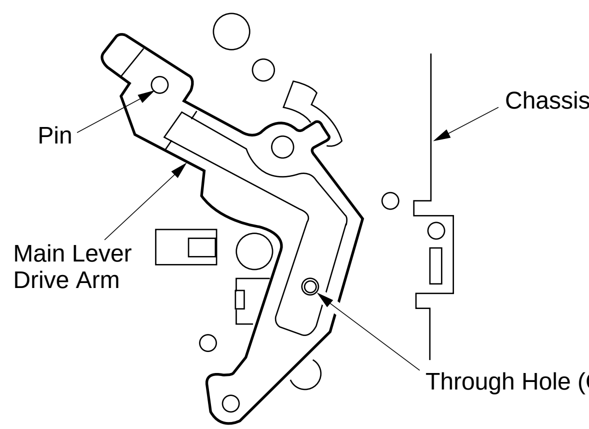


Fig. J7-2

T Brake Unit, Changing Lever A, and T Reel Table

Disassembly Procedure

1. Remove the T Brake Unit while releasing Locking Tab (E) located under the chassis.
2. Remove Cut Washer (A). Then, pull up on the Changing Lever A and remove.
3. Pull up on the T Reel Table.

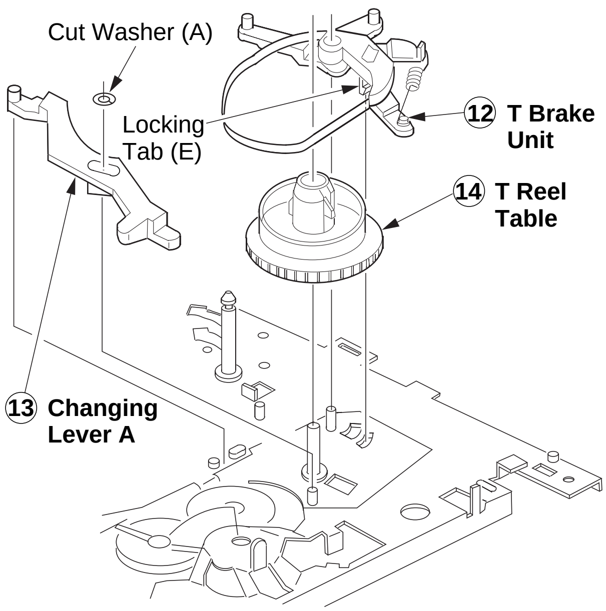


Fig. J8-1

Reassembly Notes

1. **How to distinguish between S Reel Table and T Reel Table**

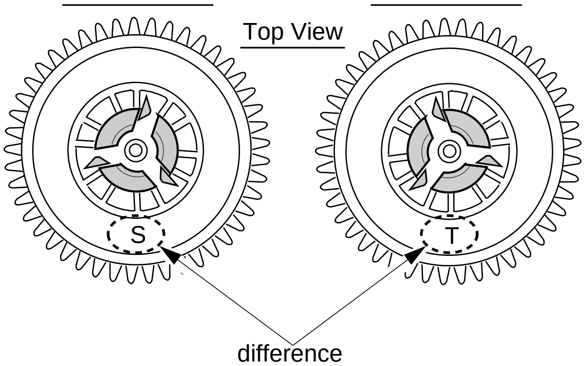


Fig. J8-2

2. Cut Washer (A) is not reusable. Install a new one.

Full Erase Head, Tension Arm Unit, S Spring Arm, and S Reel Table

Disassembly Procedure

1. Turn the Full Erase Head fully counterclockwise while releasing Locking Tab (F) as shown. Then remove it.
2. Unhook Spring (A).
3. Remove the Tension Arm Unit by pulling it up while releasing 2 Locking Tabs (G).
4. Remove the S Spring Arm while releasing Locking Tab (H).
5. Pull up on the S Reel Table.

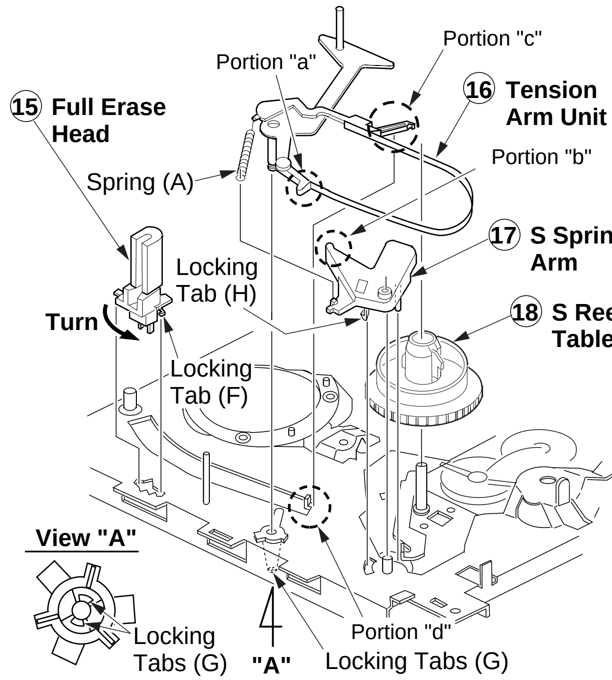


Fig. J9-1

Reassembly Notes

1. **Confirmation/Adjustment of Tension Arm Unit**
   1) When installing Tension Arm Unit and S Spring Arm, confirm "a," "b," "c," and "d" portion are in the proper position as shown.

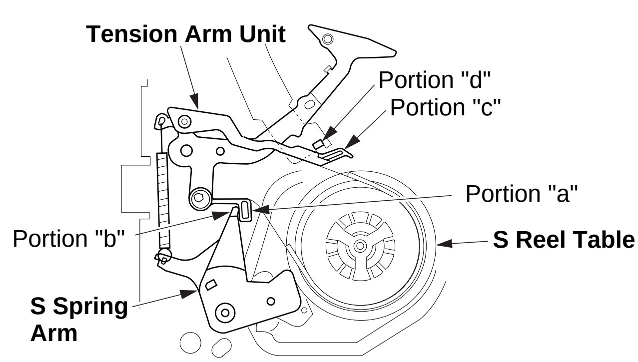


Fig. J9-2

   2) After installing, perform the "Tension Post Adjustment" procedures.

S Brake Arm Unit, Main Lever Guide, Loading Post Base -S, and Loading Post Base -T Unit

Disassembly Procedure

1. Remove the S Brake Arm Unit while releasing 2 Locking Tabs (I).
2. Remove the Main Lever Guide while releasing Locking Tab (J).
3. Slide the Loading Post Base -S and T Units to the end of the guide slots to remove.

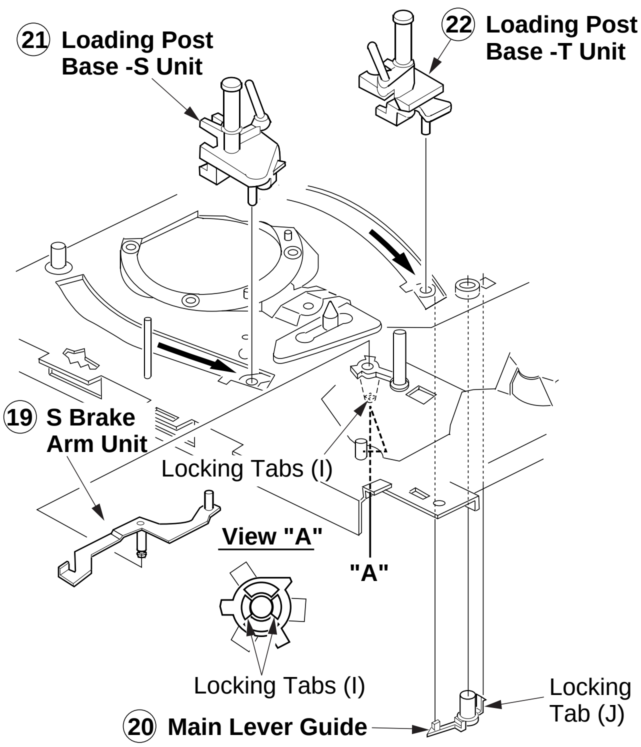


Fig. J10

Reassembly Notes

1. **Adjustment of Loading Post Base -S Unit and Loading Post Base -T Unit**
   1) After installing, perform the "P2 and P3 Post Height Adjustment" procedures and "Tape Interchangeability Adjustment" procedures.

Capstan Rotor Unit, Capstan Holder Unit, and SS Brake Arm Unit

Disassembly Procedure

1. Remove the Capstan Belt.
2. Cut the Stopper with a cutter to remove.
3. Pull up on the Capstan Rotor Unit.
4. Remove 3 Screws (B). Then remove the Capstan Holder Unit.
5. Unhook Spring (B).
6. Turn the SS Brake Arm Unit so that the Tab (A) lines up with the niche. Then, remove the SS Brake Arm Unit.

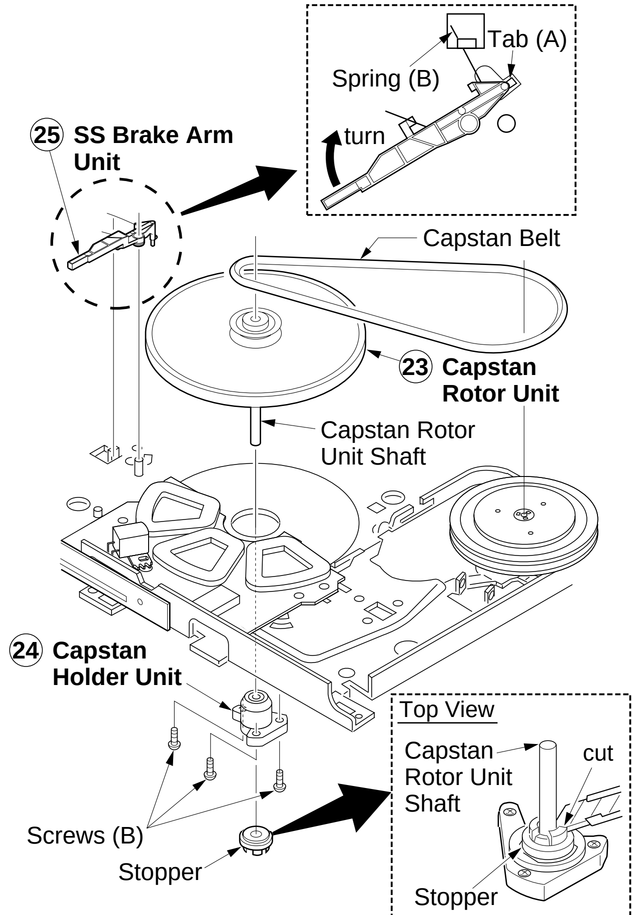


Fig. J11-1

Reassembly Notes

1. **Installation of Capstan Rotor Unit**
   1) Insert the Capstan Rotor Unit Shaft into the hole of the Capstan Holder Unit.
   2) Place a support under the Capstan Rotor Unit shaft. Install the Stopper. Be careful not to scratch the shaft or Capstan Holder Unit.
   3) Remove the support. Press the top end of the shaft down so that the Stopper is properly positioned.
   You should be able to move the shaft up and down slightly when properly positioned.

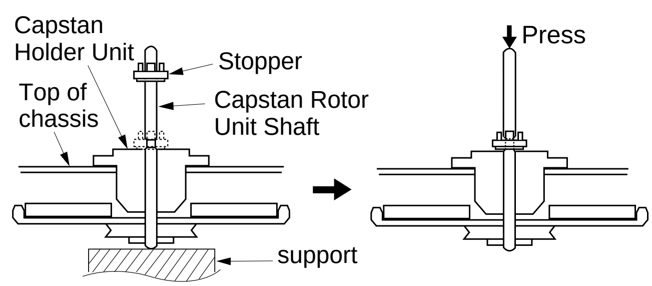


Fig. J11-2

2. **Capstan Rotor Kit**
   Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Rotor Kit only. (Kit No. VXPS0382K2)
   They are not reusable. Install all new parts.
   Because even invisible scratches on the Capstan Rotor Unit shaft and the Capstan Holder Unit, made when cutting the Stopper, could cause tape path instability.

Junction C.B.A., Capstan Stator Unit, Sub Rotor, and PCB Holder

Disassembly Procedure

1. Remove 2 Screws (C).
2. Unsolder P2532 on the Junction C.B.A. Then, remove the Junction C.B.A.
3. Remove Screw (D) and 2 Screws with Washers (D), (E). Then, remove Capstan Stator Unit, Sub Rotor, and PCB Holder.

CAUTION:

When removing Capstan Stator Unit, avoid touching IC2501 on the Capstan Stator Unit because it is **HOT** during operation.

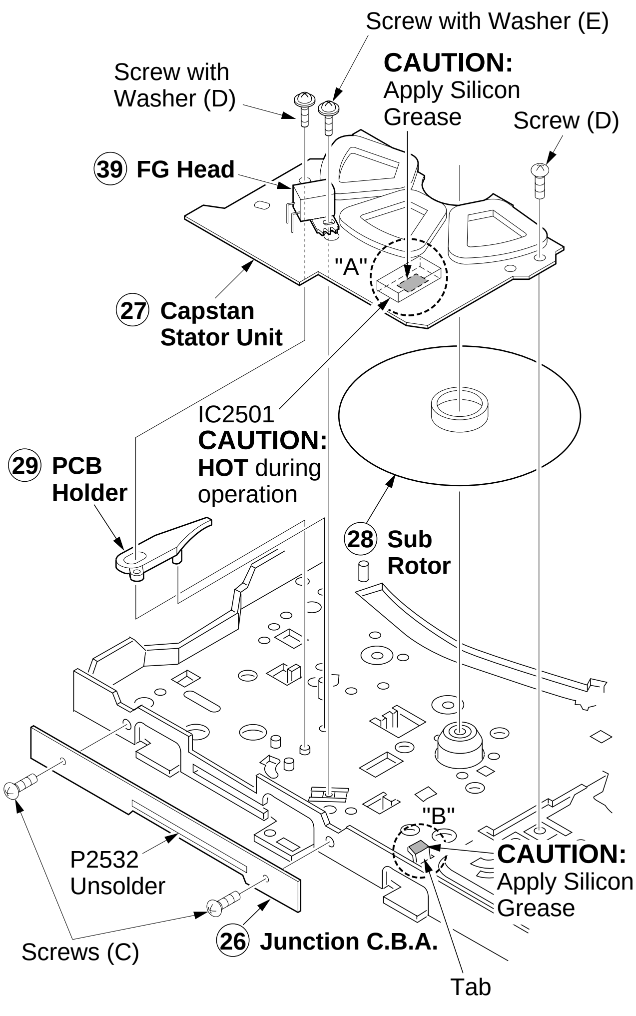


Fig. J12-1

Reassembly Notes

1. **Application of Silicon Grease**

CAUTION

When installing the IC2501 or Capstan Stator Unit, be sure to apply Silicon Grease (VFK1301) as shown. Be careful not to touch other parts with greased portion to prevent grease depletion.

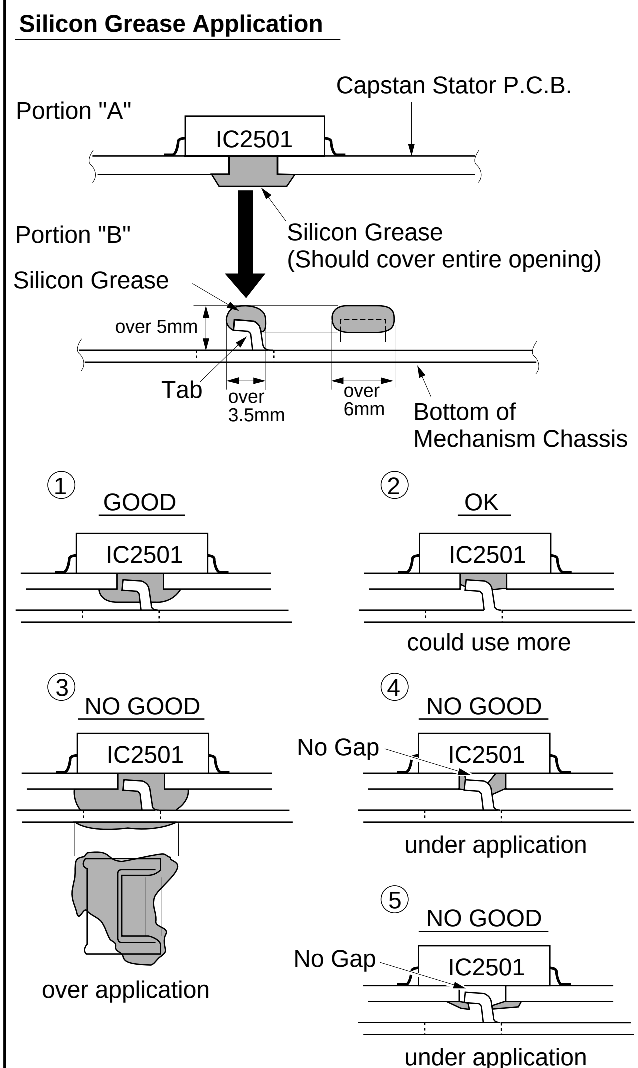


Fig. J12-2

2. **Capstan Stator Kit**
   1) Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit only (Kit No. VEMS0316K2).
   However, IC2501(AN3845SC) is available separately as a replacement part.
   Capstan Rotor Unit, Capstan Holder Unit, and Stopper are not reusable. Install all new parts.
   Because even invisible scratches on the Capstan Rotor Unit shaft and the Capstan Holder Unit, made when cutting the Stopper, could cause tape path instability.
3. **Adjustment of FG Head**
   1) After installing, perform the "FG Head gap Adjustment" procedures.

T Loading Arm Unit and S Loading Arm Unit

Disassembly Procedure

1. Remove the T Loading Arm Unit by pulling it up while releasing Locking Tab (K).
2. Pull up on the S Loading Arm Unit.

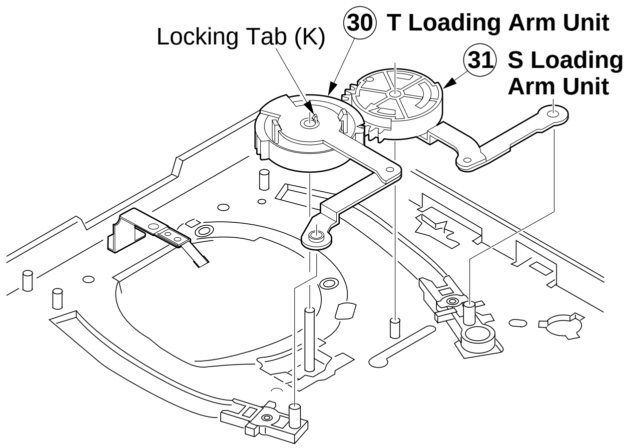


Fig. J13-1

Reassembly Notes

1. **Alignment of Loading Rack Unit, T Loading Arm Unit, and S Loading Arm Unit**
   1) Slide the Loading Rack Unit so that the holes on it and the holes on the chassis line up properly.
   2) Install the S Loading Arm Unit onto the Chassis.
   3) Install the T Loading Arm Unit so that the triangle-shaped indent is aligned with the arrow on the S Loading Arm Unit as shown. Confirm that each hole on the T Loading Arm Unit, Chassis, and Loading Rack Unit are through holes.

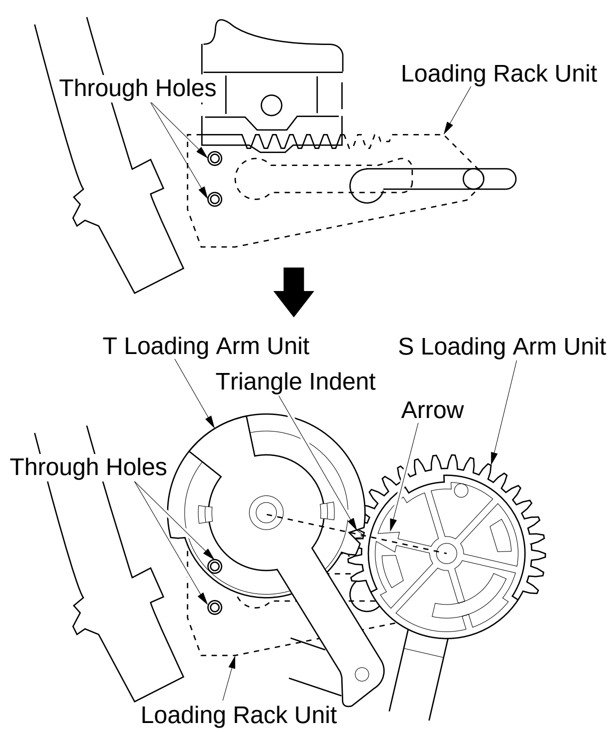


Fig. J13-2

Center Clutch Unit, Changing Gear Spring, Changing Gear, Changing Lever-B, and Idler Arm Unit

Disassembly Procedure

1. Remove Cut Washer (B). Then remove the Center Clutch Unit, Changing Gear Spring, and Changing Gear.
2. Remove Changing Lever -B so that the 2 Mounting Holes clear Mounting Pins.
3. Pull up on the Idler Arm Unit.

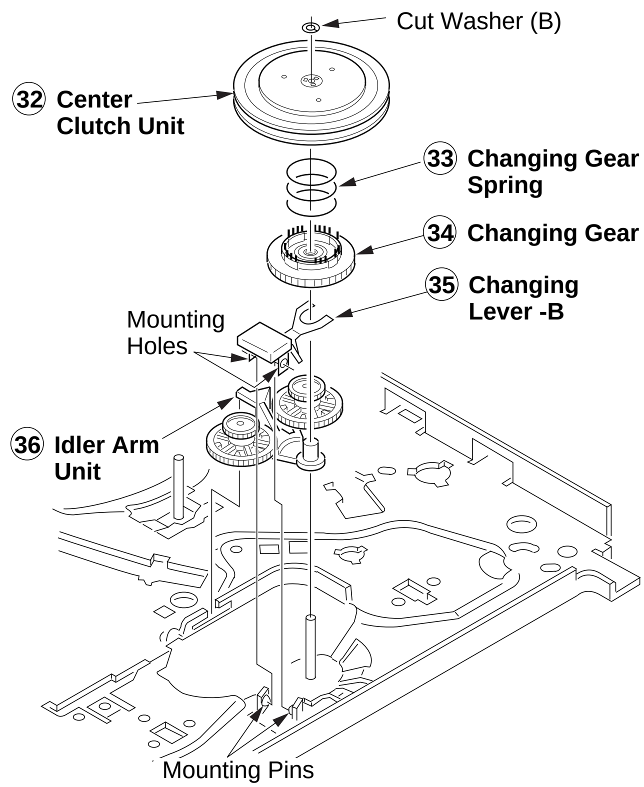


Fig. J14-1

Reassembly Notes

1. **Installation of Center Clutch Unit**
   1) Fit the Center Clutch Unit into the Changing Gear as shown.

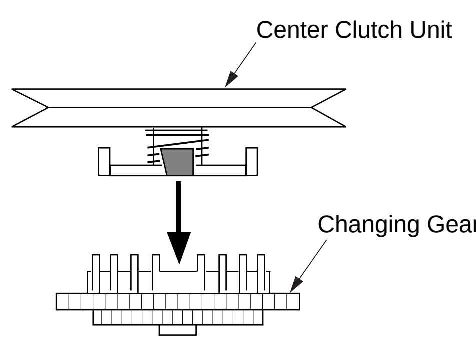


Fig. J14-2

2. Cut Washer (B) is not reusable. Install a new one.

Loading Rack Unit

Disassembly Procedure

1. Slide the Loading Rack Unit as indicated by the arrow. Then, pull up on the Loading Rack Unit.

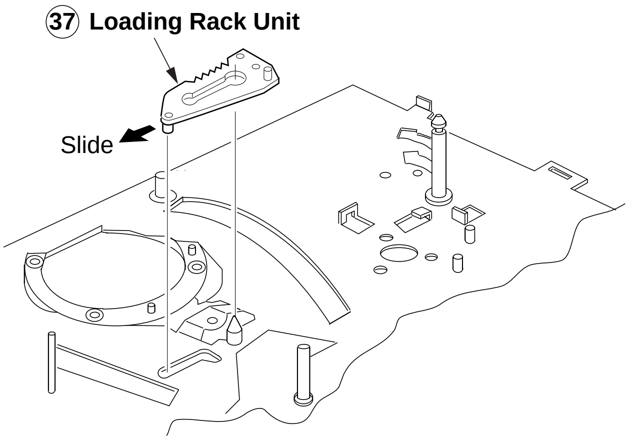


Fig. J15

Reassembly Notes

1. **Alignment of Loading Rack Unit**
   1) When installing Loading Rack Unit, refer to Reassembly Notes of "T Loading Arm Unit and S Loading Arm Unit."

DISASSEMBLY/ASSEMBLY PROCEDURES OF CASSETTE UP ASS'Y

Top Plate, Wiper Arm Unit, and Holder Unit

Disassembly Procedure

1. Remove Top Plate by releasing 2 Locking Tabs (A) on the left side and 2 Locking Tabs (B) on the right side of the Top Plate.
2. Remove Wiper Arm Unit by releasing 2 Locking Tabs (C). Then, remove the Holder Unit.

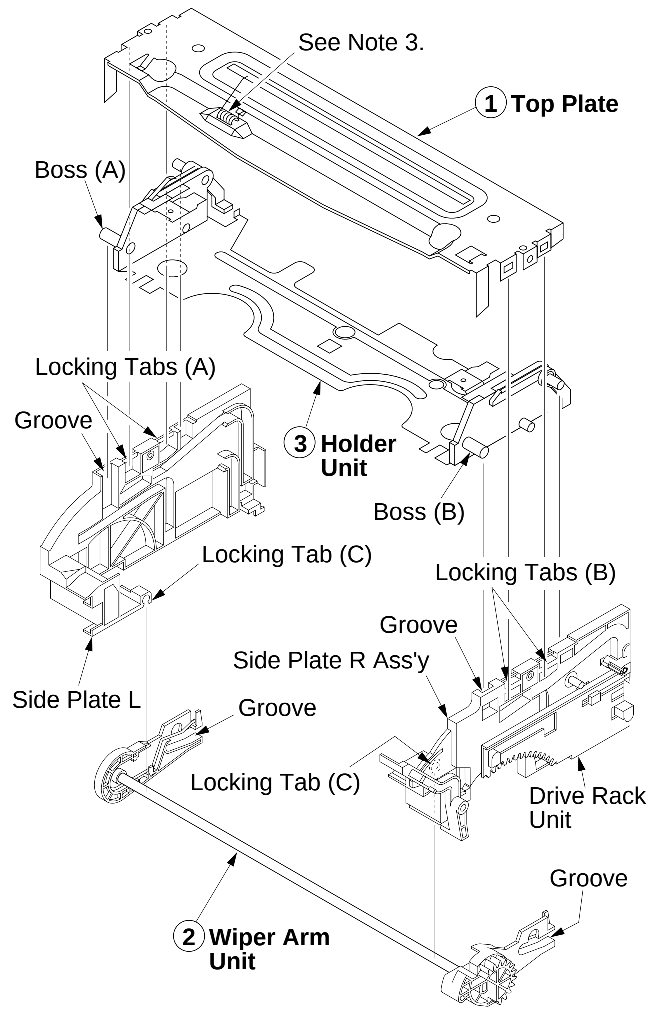


Fig. K1-1

Reassembly Notes

1. **Alignment of Wiper Arm Unit and Drive Rack Unit**
   1) Slide the Drive Rack Unit to the far right as indicated by the arrow.
   2) Install the Wiper Arm Unit so that the hole on the Wiper Arm Unit is aligned with the hole on the Drive Rack Unit.

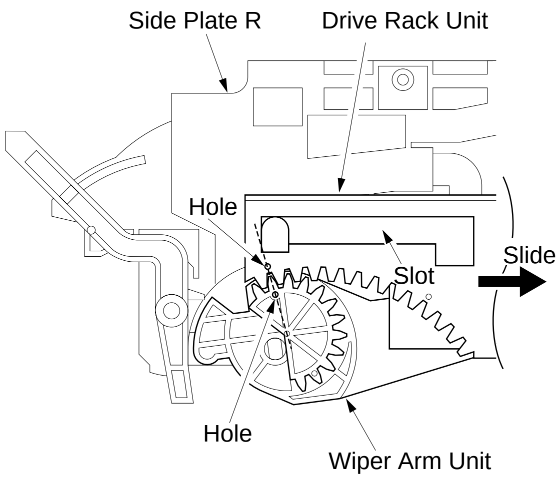


Fig. K1-2

2. **Installation of Holder Unit**
   1) Turn the Wiper Arm Unit so that the grooves on each end are aligned with the each groove on Side Plate L and R.
   2) Insert Holder Unit boss (A) and (B) into the grooves (See Fig. K1-1 on previous page).
   3) Finally, in the EJECT Position, confirm that the protrudence on the Wiper Arm Unit is aligned with the indentation on the Drive Rack Unit.

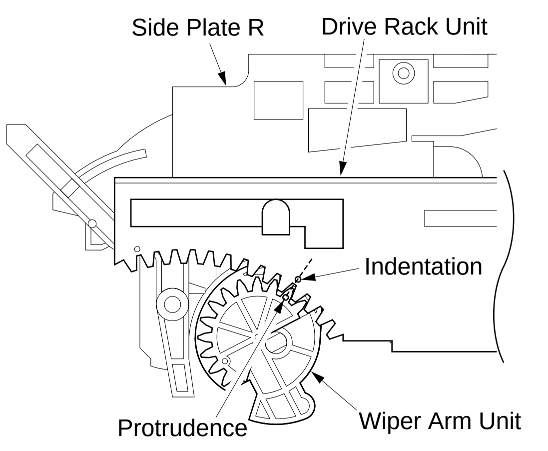


Fig. K1-3

3. As an ESD countermeasure, make sure the spring is in contact with Top Cover.

Sensor Cover, Opener Lever, and Drive Rack Unit

Disassembly Procedure

1. Remove the Sensor Cover by releasing Locking Tab (D).
2. Remove the Opener Lever by releasing 2 Locking Tabs (E). Then remove the Drive Rack Unit.

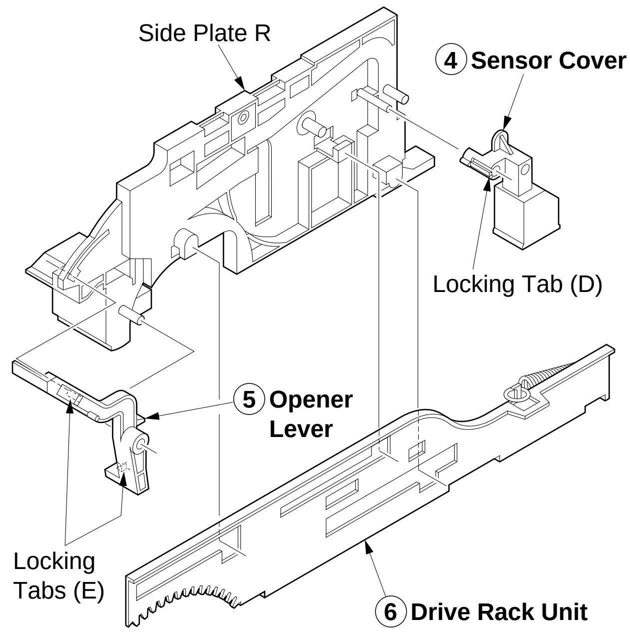
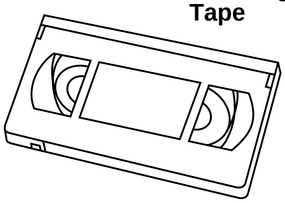


Fig. K2

ADJUSTMENT PROCEDURES

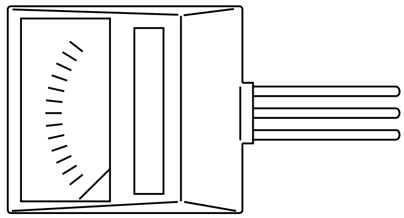
SERVICE FIXTURES AND TOOLS

VFMS0003H6 **VHS Alignment Tape**

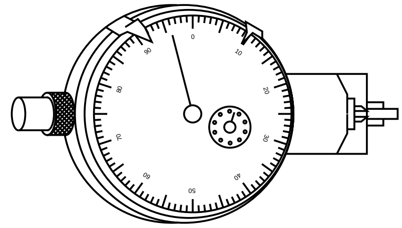


Video	Color Bar & Monoscope
Audio	6kHz(MONO)

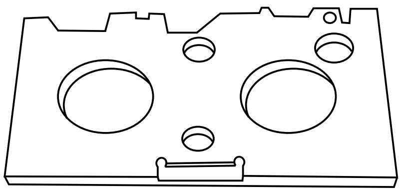
Back Tension Meter (Made in USA., Purchase Locally)



VFKS0009 **Reel Table Height Fixture**



VFKS0010 **Post Adjustment Plate**



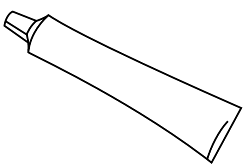
VFKS0081 **Grease**



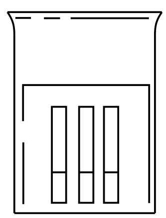
VFK0329 **Post Adjustment Driver**



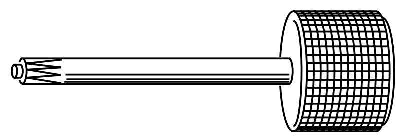
VFK1301 **Silicon Grease**



VFK27 **Head Cleaning Stick**

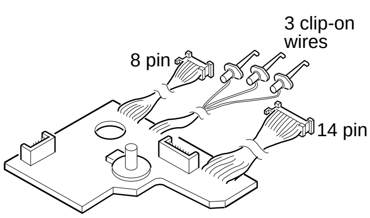


VFK0330 **H-Position Adjustment Driver**

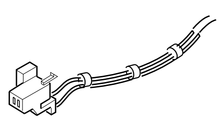


VUZS0002 **Extension Cable Kit**

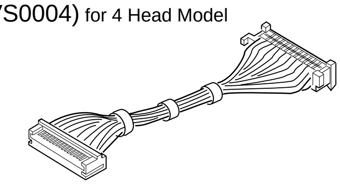
Mode Select SW. Ass'y
(VUVS0001)



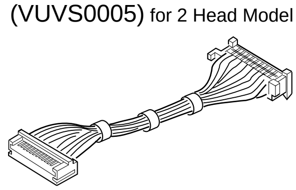
Extension Cable -1
(VUVS0002)



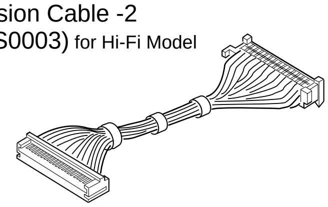
Extension Cable -2
(VUVS0004) for 4 Head Model



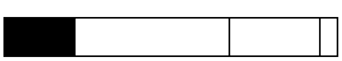
Extension Cable -2
(VUVS0005) for 2 Head Model



Extension Cable -2
(VUVS0003) for Hi-Fi Model



TSM10032-2 **Permalloy Magnetic Strip**



(Model: G, H, I, J, K)

MECHANICAL ADJUSTMENT

CLEANING PROCEDURE FOR THE UP-PER CYLINDER UNIT

1. While slowly turning the Upper Cylinder Unit counterclockwise by hand, gently rub the Video Heads with a Head Cleaning Stick (VFK27) moistened with Ethanol. When using a Cleaning Cassette, make sure to use "DRY" type only and be aware that excessive use can shorten head life.

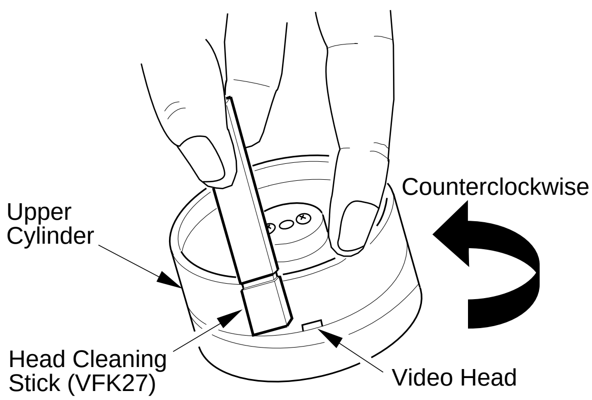


Fig. M1

Note:

1) Do not rub vertically or apply excess pressure to the Video Heads.
   Do not turn the Upper Cylinder Unit clockwise while cleaning.
2) After cleaning, use a Dry Head Cleaning Stick (VFK27) to remove any Ethanol remaining on the cylinder tape path. Otherwise, tape damage will occur.

ADJUSTMENT PROCEDURES

TENSION POST ADJUSTMENT

Purpose:
To maintain a constant tape tension so that the tape runs with stability by performing preliminary adjustment.

Symptom of Misadjustment:
1) If the adjusted value is below the specification, the tape tension is not sufficient, thus causing a tape slack.
2) If the adjusted value is above the specification, the tape tension is too high, thus causing tape damage.

Equipment Required:
2 mm Hex. Wrench .... (Purchase Locally)

1. Remove the Cassette Up Ass'y.
2. Plug the AC plug into an AC outlet.
3. Place the unit in the Service Mode. Refer to "Service Mode" in the "Service Notes" section of this manual.
   The power comes on and the unit goes into the PLAY Mode.
4. Using a (2 mm) Hex. Wrench, adjust the nut on the Tension Adjust Piece (counterclockwise only) so that there is a space of 1 mm between the left edge of the P1 Post and the right edge of the Tension Post. Make sure that the center of the Hex. Wrench hole is within Area "A".
5. After adjustment, remove the Hex. Wrench.
6. Press the STOP/EJECT button to place the unit in the EJECT Mode.
7. Release the unit from the Service Mode. Refer to "Service Mode" in the "Service Notes" section of this manual.

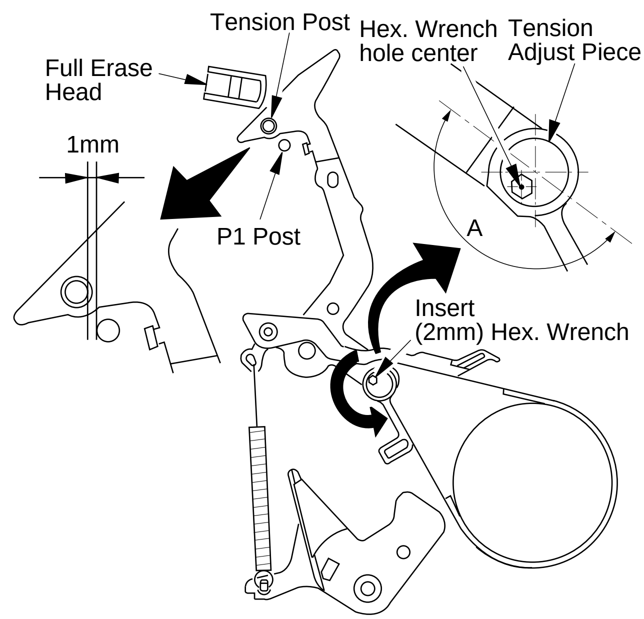


Fig. M2

BACK TENSION CONFIRMATION

Purpose:
To fine adjust the Back Tension so that the tape runs smoothly with a constant tension.

Symptom of Misadjustment:
1) If the tape tension is less than the specified value, the tape cannot come into proper contact with the Video Heads, resulting in poor picture playback.
2) If the tape tension is too high, the tape will soon be damaged.

Measurement Procedure

Equipment Required:
Back Tension Meter (Made in U.S.A., Purchase Locally)
VHS Cassette Tape (120-Minute Tape)

Specification .... 25 +/- 2.5g

1. Play back a T120 cassette tape from the beginning for approx. 10 to 20 seconds to stabilize tape movement.
2. Insert a Tension Meter into tape path and measure the back tension.
3. If the reading is out of specification, make sure that there is no dust or foreign material between the Tension Band of Tension Arm Unit and the Reel Table.
   If cleaning does not correct the tension measurement, replace the Tension Spring and the Tension Arm Unit.

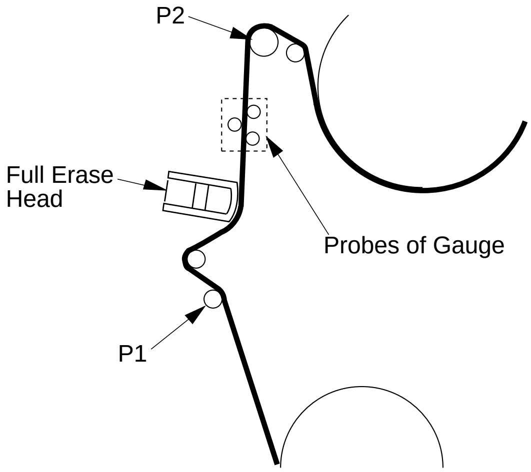


Fig. M3-1

Note:
1) Be sure that the three probes of the meter are all in solid contact with the tape, but not touching any other parts of the mechanism.
2) It is recommended that measurements be repeated at least three (3) times because the tension meter is very sensitive to external vibrations.

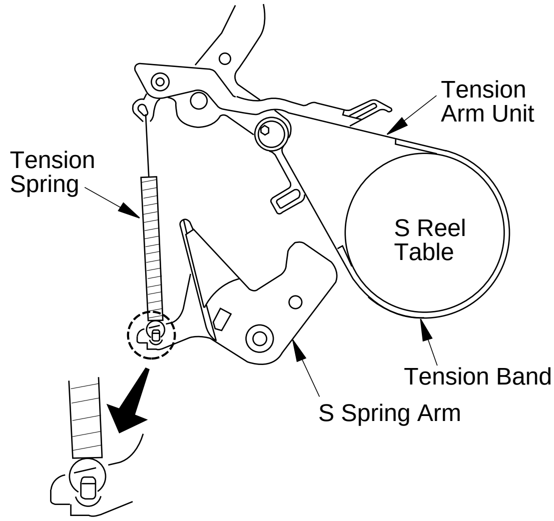


Fig. M3-2

FG HEAD GAP ADJUSTMENT

Purpose:
To properly pick up the FG Signal.

Symptom of Misadjustment:
If the FG Signal is not properly picked up, Servo Operation cannot be achieved.

Equipment Required:
Oscilloscope

Specification .... 0.13 +/- 0.02mm

1. Remove the VCR Chassis Unit and then place it upside down.
2. Remove the Main C.B.A.
3. Slightly loosen Black Screw (A). Then set the Screwdriver (#1 or #2 Phillips Driver) into the Hole (A). Turn the screwdriver counterclockwise until the FG Head touches the rotor. Then turn it slightly clockwise to the clearance as specified.
4. Tighten Black Screw (A).
5. Reinstall the Main C.B.A.

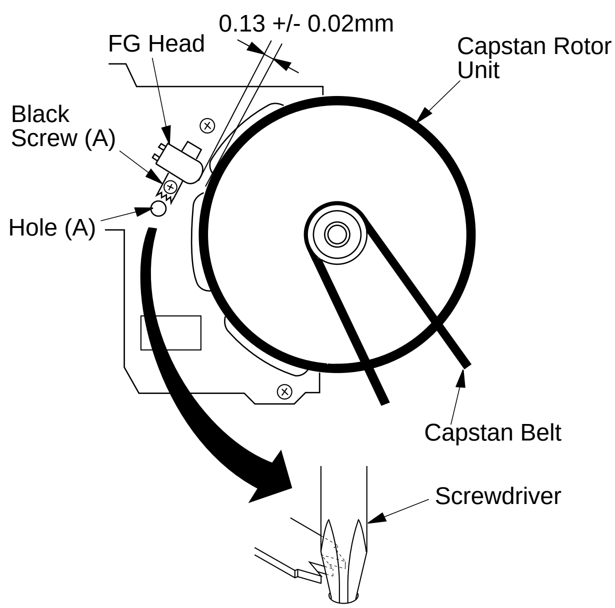


Fig. M4

Note:
Do not touch the outside circumference of the rotor surface with any tool and keep magnetic material away from the rotor magnet (especially metal particles).

Confirmation of Signal Level
1) Supply a Video Signal to the Video Input Jack.
2) Insert a cassette tape and place the unit in SLP recording mode.
3) Connect the oscilloscope to Pin 7 of P2502 on the Capstan Stator Unit.
Confirm that the signal level is greater than 15mVp-p.

P2 AND P3 POST HEIGHT ADJUSTMENT (PRELIMINARY ADJUSTMENT)

Purpose:
To properly align the position of the tape with the Cylinder Lead so that the tape runs with stability.

Symptom of Misadjustment:
1) Since the Envelope Waveform Signal cannot be tracked properly, the Playback picture will be poor.
2) Since the tape does not run smoothly, the tape will eventually be damaged.
3) Tape interchangeability is poor.

Equipment Required:
Post Adjustment Plate .... (VFKS0010)
Reel Table Height Fixture .... (VFKS0009)
Post Adjustment Driver ....(VFK0329)

1. Remove the Cassette Up Ass'y.
2. Position the Post Adjustment Plate over the reels.
3. Place the fixture on the Post Adjustment Plate and zero the fixture (DO NOT use the cut-out portion of the post adjustment plate.)

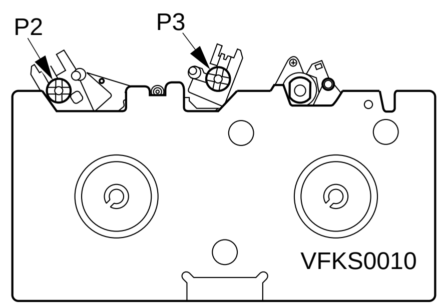


Fig. M5-1

4. Lower each post below the top edge of the Post Adjustment Plate. Then, raise each post until it contacts the foot of the Reel Table Height Fixture. For proper adjustment, the foot of that should be positioned as shown.

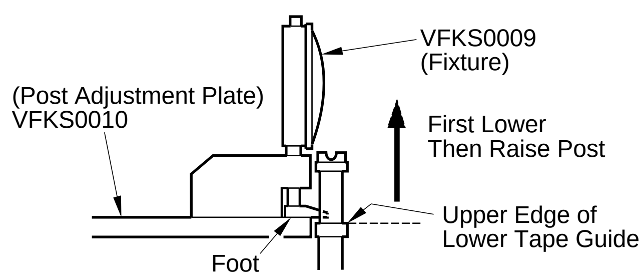


Fig. M5-2

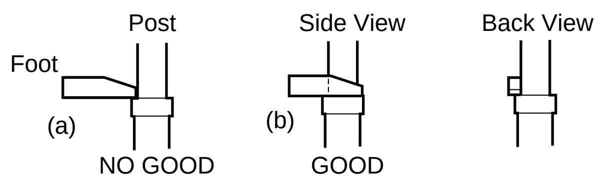


Fig. M5-3

CAUTION:
1) Overtightening P2 and P3 posts may cause the threads to strip.
2) Upon completion of this procedure, perform the "Envelope Output Adjustment" procedures.

TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)

Note:

To perform these adjustment/confirmation procedures, set the tracking to the neutral position.

Equipment Required:

Dual Trace Oscilloscope
VHS Alignment Tape .... (VFMS0003H6)
Post Adjustment Driver ....(VFK0329)
H-Position Adjustment Driver .... (VFK0330)

1. ENVELOPE OUTPUT ADJUSTMENT

Purpose:

To achieve a satisfactory picture and secure precise tracking.

Symptom of Misadjustment:

If the envelope is output poorly, much noise will appear in the picture. Then the tracking will lose precision and the playback picture will be distorted by any slight variation of the tracking control circuit.

Equipment Required:

Post Adjustment Driver ....(VFK0329)

1. Connect the oscilloscope to TP3002 on the Main C.B.A. Use TP6205 as a trigger.
2. Place a jumper between TP6003 and +5V(TP6009) on the Main C.B.A. to defeat Auto Tracking.
3. Eject the tape and insert it again to access the Neutral Tracking position.
4. Play back the alignment tape and confirm that the RF envelope appears.
5. With Post Adjust Driver, adjust P2 and P3 post height so that the envelope waveform (V_1/V-max. is 0.7 or more.) becomes as flat as possible (No envelope drop). If the envelope drop appears on the left-half of the waveform, adjust P2 post height. If the envelope drop appears on the right-half of the waveform, adjust P3 post height.

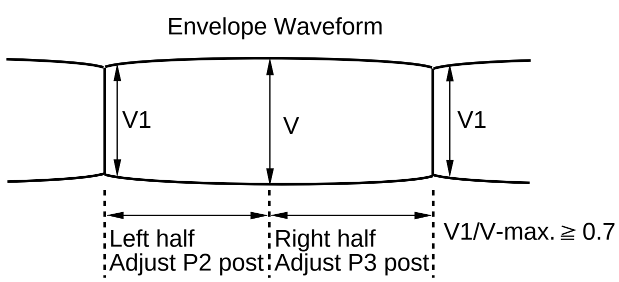


Fig. M6-1

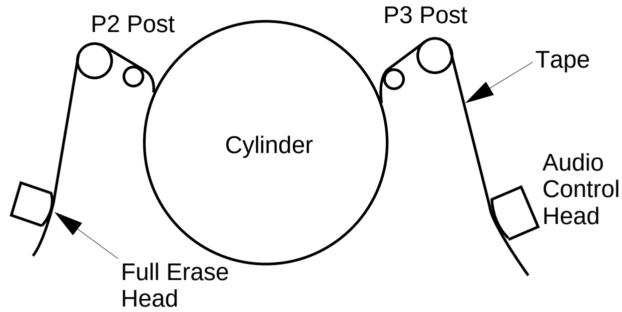


Fig. M6-2

Note:

To confirm adjustment, press the Tracking Control Up or Down button on remote control. Make sure that the envelope waveform remains flat. If not, readjust P2 and/or P3 post heights.

6. After adjustment, confirm that the tape travels without curling at P2 and P3 posts.
7. Remove the jumper after completing the adjustment procedure.

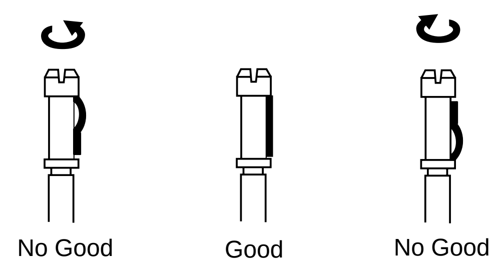


Fig. M6-3

Note:

Overtightening P2 and P3 posts may cause the threads to strip.

2. AUDIO CONTROL HEAD TILT ADJUSTMENT

Purpose:
To confirm that the tape runs smoothly. In particular, confirm that the tape properly picks up the Audio Signal at the upper part of the head and the Control Signal at the lower part of the head.

Symptom of Misadjustment:
If the tilt of the Audio Control Head is poorly adjusted, the tape will eventually be damaged. An intermittent Blue screen may be seen in Playback.

1. Play back a T120 cassette tape and check that the tape travels smoothly between the upper and lower guides of the P4 post.
2. If necessary, adjust Black Screw (B) clockwise until the tape begins to curl at the lower edge of the P4 post. Then adjust the screw counterclockwise until the curling is eliminated.

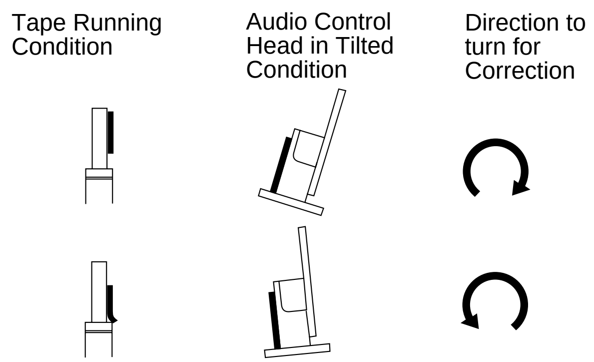


Fig. M7

3. AUDIO CONTROL HEAD HEIGHT ADJUSTMENT

The height of the Audio Control Head replacement part is preset at the factory.

Purpose:
To be sure the tape runs properly along the Control Head.

Symptom of Misadjustment:
If the control signal is not properly picked up, Servo Operation cannot be achieved. A Blue screen will be seen in Playback.

This confirmation is required when the Audio Control Head is replaced.

1. Play back a T120 cassette tape and check that the lower edge of the tape runs approximately 0.25 mm above the lower edge of the Audio Control Head.
2. If necessary, adjust Black Screws (A) and (B) clockwise to lower the tape or counterclockwise to raise.

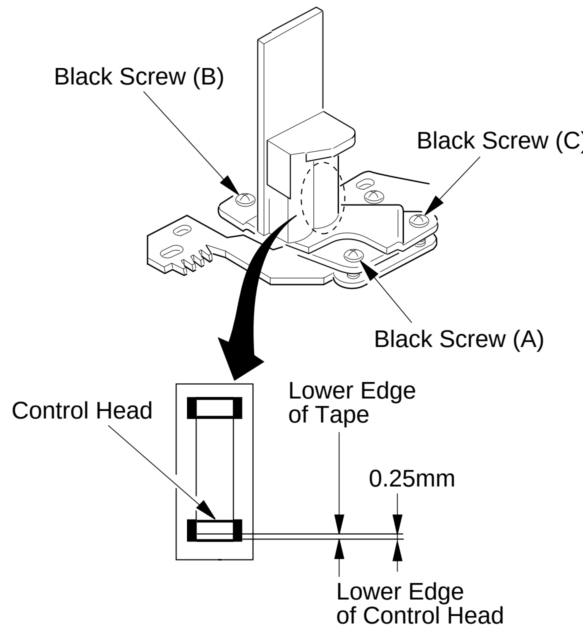


Fig. M8

4. AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

Purpose:
To adjust the position and height of the Audio Control Head so that it meets the tape tracks properly.

Symptom of Misadjustment:
If the position of the Audio Control Head is not properly adjusted, the Audio S/N Ratio is poor.

1. Connect the oscilloscope to the TP4002 on the Main C.B.A.
2. Play back the 6kHz Monaural Audio portion of the alignment tape.
3. Adjust Black Screw (C) on the Audio Control Head base so that the output level is at maximum.

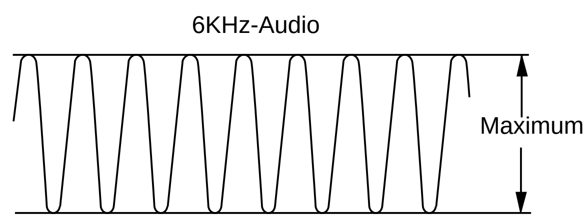


Fig. M9

4. Confirm the height of the Audio Control Head is proper. If not, readjust Black Screws (A) and (B).

5. AUDIO CONTROL HEAD HORIZONTAL POSITION ADJUSTMENT

Purpose:
To adjust the Horizontal Position of the Audio Control Head.

Symptom of Misadjustment:
If the Horizontal Position of the Audio Control Head is not properly adjusted, a maximum envelope cannot be obtained at the Neutral Position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP3002 on the Main C.B.A. Use TP6205 as a trigger.
2. Place a jumper between TP6003 and +5V(TP6009) on the Main C.B.A. to defeat Auto Tracking.
3. Eject the tape and insert it again to access the Neutral Tracking position.
4. Play back the alignment tape and confirm that the RF envelope appears.
5. If adjustment is required, loosen the Black Screw (D) and tighten it lightly. Set the H-Position Adjustment Driver into the Hole (A). Then slowly turn the fixture either clockwise or counterclockwise so that the envelope is at maximum.
6. Before finding the center of the maximum period of the envelope, rotate the fixture back and forth slightly to confirm the limits on either side of the maximum period.
7. Push the Tracking Control Up Button (on the Remote Control) several times (count the number of times pushed) until the maximum envelope is reduced to 1/2.
8. Reset the tracking to the neutral position by ejecting the tape and reinserting it. Push the Tracking Control Down Button (on the Remote Control) several times (count the number of times pushed) until the maximum envelope is reduced to 1/2.
9. If the number of pushing is not the same, then loosen the Black Screw (D) and set the H-Position Adjustment Driver into the Hole (A) to find the center point. Then repeat the above procedure to determine the center point.
10. Tighten Black Screw (D).
    (The Black Screw (D) should be in the approximate center of the hole.)
11. Remove the jumper between TP6003 and +5V(TP6009).

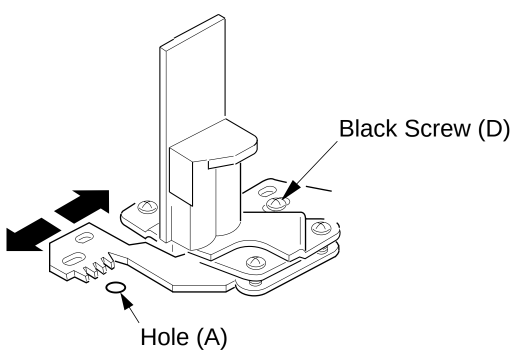


Fig. M10

Note:
Old type of H-Position Adjustment Driver (VFK0136) can be used for this adjustment.

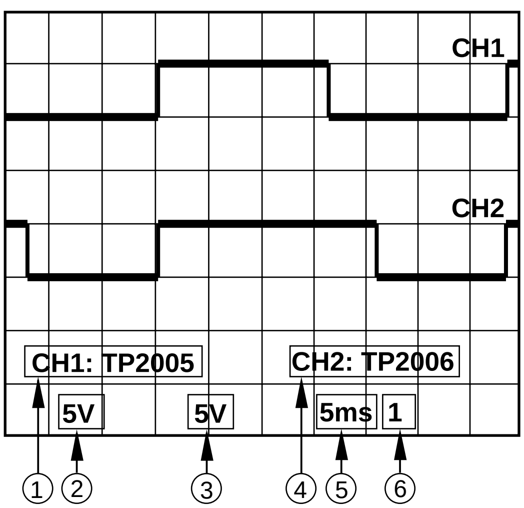
ELECTRICAL ADJUSTMENT

TEST EQUIPMENT

To do all of these electrical adjustments, the following equipment is required.

1. Dual-Trace Oscilloscope
   Voltage Range : 0.001 to 50V/Div.
   Frequency Range : DC to 50MHz
   Probes : 10:1, 1:1
2. NTSC Video Pattern Generator
3. DVM(Digital Volt Meter)
   Voltage Range : 0.01 to 50V
4. MTS/SAP Signal Generator
   (TV Multi-Channel Sound Modulator (U.S.A.))
5. Frequency Counter
   Frequency Range : 0 to 150MHz
6. Plastic Tip Driver and Non-Metal Driver
7. Isolation Transformer (Variable)
8. VHS Alignment Tape (VFMS0003H6)
9. Degaussing Coil
10. White Pattern Generator

HOW TO READ THE ADJUSTMENT PROCEDURES



1. Connecting Point
2. Volts/DIV
3. Volts/DIV
4. Connecting Point
5. Time/DIV
6. Trigger Channel of the Scope
1 : CH1
2 : CH2

Fig. E1

SEPARATION ADJUSTMENT (Model: K)

Purpose:
To separate the L and R Channels of Stereo Signal.

Symptom of Misadjustment:
The L and R Channels of Stereo Signal will not be separated properly resulting in no stereophonic effect.

Test Point : TP4202 (TV Stereo C.B.A.)
Adjustment : R4901 (TV Stereo C.B.A.)
Specification: minimum level
INPUT : Antenna Input Terminal
MTS (ONLY L CH)
300Hz +/- 5Hz
14% or 7% Modulating
Mode : STEREO audio (TV)
Equipment : Oscilloscope, MTS/SAP Signal Generator

1. Connect the RF OUTPUT of the MTS/SAP Signal Generator to the Antenna Input Terminal.
2. Connect the Oscilloscope to TP4202(R CH) on the TV Stereo C.B.A.
3. Set to TV mode, and then set to STEREO audio.
4. Adjust R4901 on the TV Stereo C.B.A. so that the signal level is minimum.

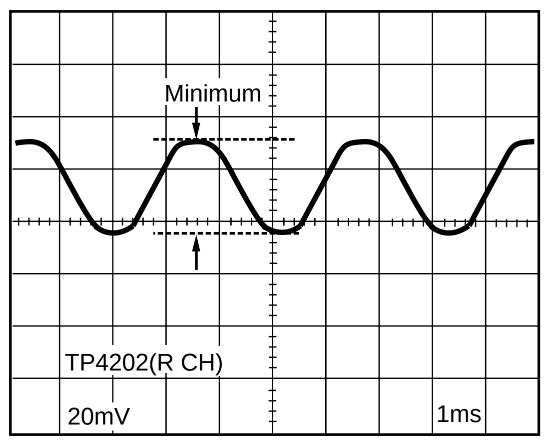


Fig. E2

FM VCO ADJUSTMENT (Model: K)

Purpose:
To set VCO free run frequency.

Symptom of Misadjustment:
Even when stereophony is received, only monaural sound will be output.

Test Point : Pin 4 of P4201,
TP9201 (TV Stereo C.B.A.)
Adjustment : R9206 (TV Stereo C.B.A.)
Specification: 38.0KHz +/- 50Hz
Input : ----------
Mode : STEREO audio (FM Radio)
Equipment : Frequency Counter,
DVM (Digital Volt Meter)

1. Connect Pin 4 of P4201 to GND.

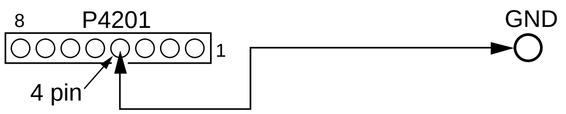


Fig. E3-1

2. Connect TP9201 on TV Stereo C.B.A. to GND through a resistor (3.3k ohm). Then, connect Frequency Counter to TP9201.

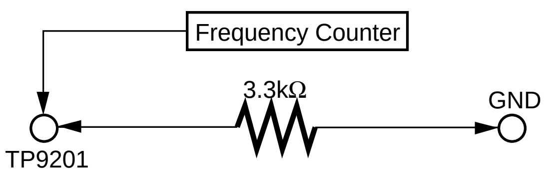


Fig. E3-2

3. Disconnect Connector PK2 on the TV Main C.B.A.
4. Turn the unit "ON."
5. Set to FM Radio mode, and then set to STEREO audio as follows.
   1) Press FM/TV key, and then press AUDIO key on the remote control.
   2) Check the voltage of following pins to confirm that the unit is in FM Radio STEREO audio mode.

Mode	Connector pin to be checked	Voltage
FM radio mode STEREO audio mode	Pin 25 of P4204	Hight (5V)
	Pin 2 of P4201	Open (approx.4V)

Fig. E3-3

   3) If not, turn the unit OFF, and then turn the unit ON. Then, perform Step 1) and 2) again.

   Note:
   With disconnecting PK2 on the TV Main C.B.A., OSD is not be displayed because power is not supplied to TV circuit.

6. Adjust R9206 (FM VCO) so that the frequency is 38.0KHz +/- 50Hz.
7. After adjustment, turn the unit OFF.
   Connect Connector PK2 and remove the GND Wire and resistor (3.3k ohm) which were connected in step 1 and 2.

EVR (Electronic Variable Register) ADJUSTMENT WITH THE REMOTE CONTROL

This unit has electronic technology using I²C Bus concept. The following control functions are adjusted by using "On Screen Displays" and the remote control instead of adjusting mechanical controls (VR).

Control functions	※2 Address	Range	Default
SUB COLOR	00	C0 – FF, 00 – 3F	00
SUB TINT	01	E0 – FF, 00 – 1F	00
SUB BRIGHT	02	C0 – FF, 00 – 3F	F0
CONTRAST	03	C1 – FF, 00	00
SUB SHARPNESS	04	E0 – FF, 00 – 1F	F0
R CUT -OFF	05	00 – 7F	1E
G CUT -OFF	06	00 – FF	3C
B CUT -OFF	07	00 – FF	3C
G DRIVE	08	00 – 7F	40
B DRIVE	09	00 – 7F	40
SUB CONTRAST	0A	00 – 0F	06
H CENTER	0B	00 – 0F	08
V POSITION	0C	00 – 06	00
V SIZE	0D	00 – 7F	40
DOT CLOCK	0E	00 – 7F	34
ANR CTL	10	00 – EF	87
PICTURE CTL	11	00 – EF	84
VV COLOR ※1	12	C0 – FF, 00 – 3F	00
VV TINT ※1	13	E0 – FF, 00 – 1F	00
VV SHARPNESS	14	E0 – FF, 00 – 1F	E8
PG SHIFTER	15	01 – FD	80

Bold-faced letters → Control functions which need to be adjusted.

Note:
※1 After "SUB COLOR/SUB TINT ADJUSTMENT" is complete, perform as follows.
- Write the same value of SUB COLOR (Address 00) to VV COLOR (Address 12).
- Write the same value of SUB TINT (Address 01) to VV TINT (Address 13) .

※2 Address is not displayed on the TV screen.
Other Addresses except above are not used.

EVR ADJUSTMENT ITEM

The following Items need to be adjusted for EVR adjustment.
- PG SHIFTER ADJUSTMENT
- OSD CLOCK FREE RUN FREQUENCY ADJUSTMENT
- SUB CONTRAST ADJUSTMENT
- FOCUS, SCREEN, CUT OFF, DRIVE ADJUSTMENT
- SUB COLOR/SUB TINT ADJUSTMENT
- PURITY ADJUSTMENT
- V. HEIGHT/H. POSITION ADJUSTMENT
- WHITE BALANCE ADJUSTMENT
- SUB BRIGHTNESS ADJUSTMENT

HOW TO ENTER EVR ADJUSTMENT MODE

Press and hold STOP, FF, and VOL DOWN buttons on the unit together over 5 seconds with no cassette inserted.
The adjustment overlay will appear.

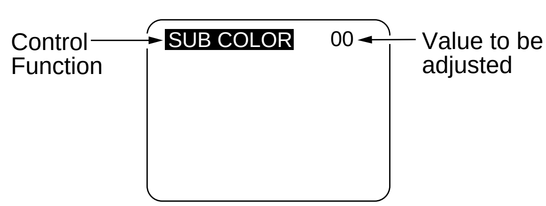


Fig. E4-1

How to adjust:

1. Press CH UP/DOWN key on the remote control to select control function to be adjusted.

Important Note:

Make a note of the original value of the controls before modifying in case the wrong control is adjusted.

2. Press VOL UP/DOWN key on the remote control so that the shaded area moves to the value.

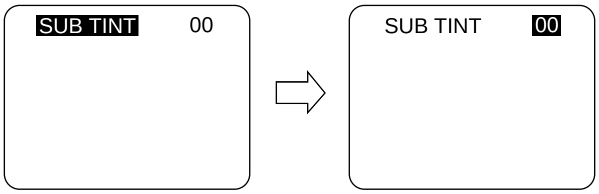


Fig. E4-2

3. Press CH UP/DOWN key on the remote control to adjust the value of the selected control.

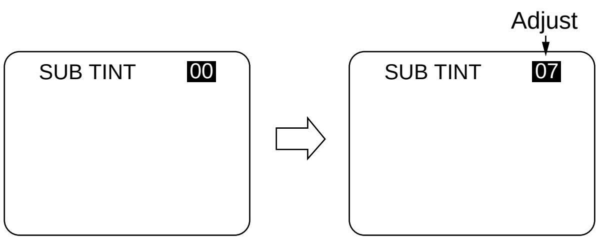


Fig. E4-3

Note:

You can select a desired channel by using the numbered keys on the remote control in EVR adjustment mode.

4. Press VOL UP/DOWN key on the remote control so that the shaded area moves to the control function.

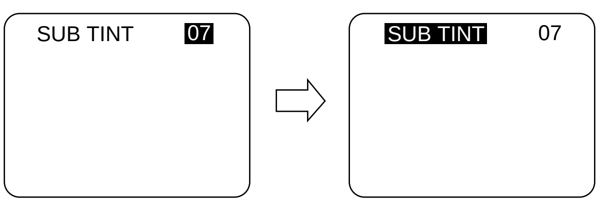


Fig. E4-4

5. Press CH UP/DOWN key on the remote control to select a control function for the next adjustment if necessary.

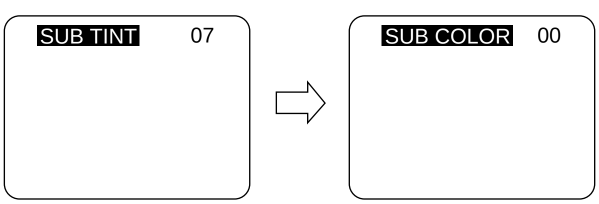


Fig. E4-5

How to release from EVR Adjustment Mode:

Press and hold STOP, FF, and VOL DOWN buttons on the unit together over 5 seconds again or press the POWER button OFF.
The adjusted value will be written to Memory IC (IC6004).

HOW TO ENTER EVR PG SHIFTER ADJUSTMENT MODE

1. Enter EVR adjustment mode.
2. Insert the VHS Alignment Tape and playback in SP mode. The adjustment overlay will appear.

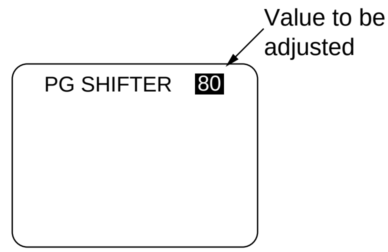


Fig. E4-6

How to adjust:

Press CH UP/DOWN key on the remote control to adjust the value.

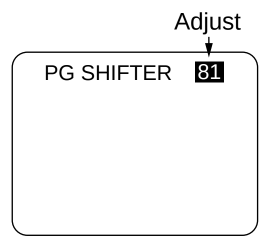


Fig. E4-7

How to release from EVR PG Shifter Adjustment Mode:

Press STOP button or press the POWER button OFF.
The adjusted value will be written to Memory IC (IC6004).

HOW TO ENTER SERVICE MODE

1. Enter EVR adjustment mode.
2. Press DISPLAY key on the remote control for collapse scan.

Note:

Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value for adjustments you will proceed.

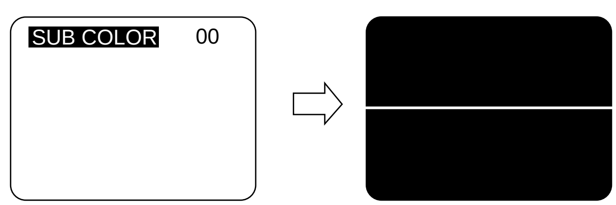


Fig. E4-8

How to release from Service Mode:

Press DISPLAY key again on the remote control.

PG SHIFTER ADJUSTMENT

Purpose:
Determine the Video Head Switching Point during Playback.

Symptom of Misadjustment:
May cause Head Switching Noise and/or Vertical Jitter.

Test Point : TP3001 (Main C.B.A.)
TP6205 (Main C.B.A.)
Adjustment : PG SHIFTER (EVR)
Specification : T = 6 +/- 1H (0.38 +/- 0.06msec.)
Input : ----------
Mode : SP Playback
Equipment : Oscilloscope,
VHS Alignment Tape (VFMS0003H6)

1. Enter EVR PG Shifter Adjustment mode, refer to "How to Enter EVR PG Shifter Adjustment Mode."
2. Connect the channel-1 scope probe to TP3001 and the channel-2 scope probe to TP6205. Trigger from channel-2.
3. Adjust value so that the leading edge of the head switching pulse is placed 6H +/- 1H (0.38 +/- 0.06msec.) before the start of the vertical sync pulse.
4. Release EVR PG Shifter Adjustment Mode.
The adjusted value will be written to Memory IC (IC6004).

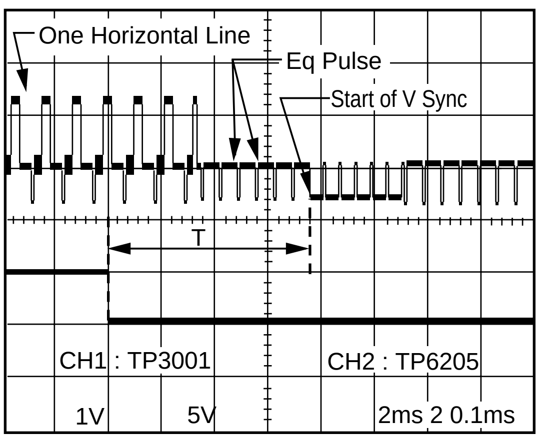


Fig. E5

OSD CLOCK FREE RUN FREQUENCY ADJUSTMENT

Purpose:
To set the OSD clock free run frequency.

Symptom of Misadjustment:
May make it so that on-screen and closed caption display do not appear.

Test Point : TP3301 (Main C.B.A.)
Adjustment : DOT CLOCK (EVR)
Specification : 2.5 +/- 0.1VDC
INPUT : Video Input Jack or Antenna Input Terminal
Any video signal, such as a color bar.
Mode : STOP
Equipment : NTSC Video Pattern Generator,
DVM (Digital Volt Meter)

1. Supply any video signal, such as color bar, to the Video Input Jacket or Antenna Input Terminal.
2. Connect the DVM (Digital Volt Meter) to TP3301 on the Main C.B.A.
3. Select DOT CLOCK in EVR adjustment mode and adjust so that the voltage is 2.5 +/- 0.1VDC.

SUB CONTRAST ADJUSTMENT

Purpose:
To set the optimum sub contrast level.

Symptom of Misadjustment:
The picture is too dark or too light.

Test Point : Pin 5 of P6001 (Main C.B.A.) or TP49 (CRT C.B.A.)
Adjustment : SUB CONTRAST (EVR)
Specification : 3.0 +/- 0.1Vp-p
Input : Video Input Jack
Crosshatch Pattern Signal 1Vp-p
(75 ohm terminated)
Mode : STOP
Equipment : Oscilloscope, NTSC Video Pattern Generator

1. Supply a Crosshatch Pattern Signal to the Video Input Jack.
2. Connect the Oscilloscope to Pin 5 of P6001 on the Main C.B.A. or TP49 on the CRT C.B.A.
3. Select SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the minimum (C0).
4. Select SUB CONTRAST in EVR adjustment mode and adjust so that the level A is 3.0 +/- 0.1Vp-p.
5. Select SUB BRIGHT in EVR adjustment mode and reset to the original value.

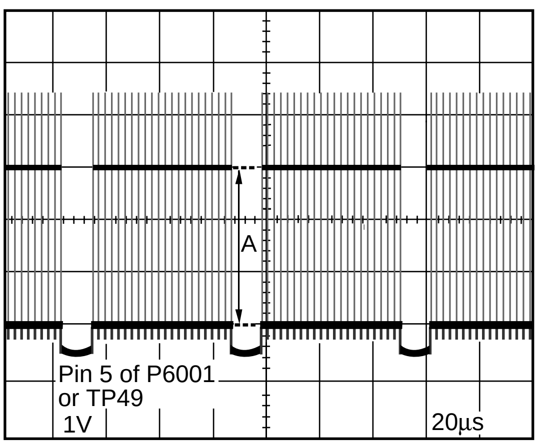


Fig. E6

FOCUS, SCREEN, CUT OFF, DRIVE ADJUSTMENT

Purpose:
To set the optimum Focus and Screen.

Symptom of Misadjustment:
The picture is out of Focus and there will be an improper screen color mix.

Test Point : TP50 (CRT C.B.A.)
Adjustment : FOCUS CONTROL (Flyback Transformer), SCREEN CONTROL (Flyback Transformer), SUB BRIGHT (EVR), B DRIVE (EVR), R DRIVE (EVR), B CUT -OFF (EVR), G CUT -OFF (EVR), R CUT -OFF (EVR)
Specification : Refer to descriptions below.
Input : Video Input Jack
Monoscope Pattern Signal
Mode : STOP
Equipment : Oscilloscope, NTSC Video Pattern Generator

1. Supply a Monoscope Pattern Signal to the Video Input Jack.
2. Connect the Oscilloscope to TP50 on the CRT C.B.A. (Use TP47E for GND.)
3. Select SUB BRIGHT and move the shaded area to the value in EVR adjustment mode.
4. Adjust the FOCUS CONTROL on the Flyback Transformer so that the center of picture is the sharpest.
5. Press DISPLAY key (Service Switch) on the remote control for collapse scan. (Refer to How to Enter Service Mode.)
6. Turn the SCREEN CONTROL on the Flyback Transformer fully counterclockwise.
7. Adjust SUB BRIGHT in EVR adjustment mode so that the level A is (140 +/- 5VDC: **Model A, B, C, D, E, F**) or (170 +/- 5VDC **Model: G, H, I, J, K**).

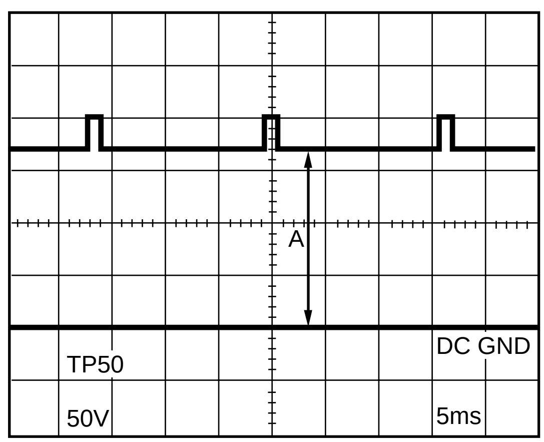


Fig. E7

8. Turn the SCREEN CONTROL on the Flyback Transformer clockwise carefully and stop at the point where any color is first observed.
9. In EVR adjustment mode, select the two colors not observed in step 8 from the following control functions (B CUT -OFF, G CUT -OFF, or R CUT -OFF) and adjust so that the horizontal line becomes white.
For example, if the horizontal line appeared red in step 8, select and adjust the B CUT -OFF and G CUT -OFF.

10. Press DISPLAY key on the remote control again to return for full frame scan.
11. Select SUB BRIGHT in EVR adjustment mode and adjust so that the picture has adequate brightness.
12. Select G DRIVE and B DRIVE in EVR adjustment mode and adjust so that the entire screen is white.

Note:
Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value.

SUB COLOR/SUB TINT ADJUSTMENT

Purpose :
To set the standard color phase.

Symptom of Misadjustment :
Color phase will be shifted.

Test Point	**:**	**Pin 5 of P6001 (Main C.B.A.) or TP49 (CRT C.B.A.)**
Adjustment	**:**	**SUB COLOR (EVR), SUB TINT (EVR)**
Specification	**:**	**C = 1.40 +/- 0.15Vp-p (Model: A, B, C, D, E, F)** **C = 1.50 +/- 0.15Vp-p (Model: G, H, I, J, K)**
Input	:	Video Input Jack Rainbow Color Bar
Mode	:	STOP
Equipment	:	Oscilloscope, NTSC Video Pattern Generator

1. Supply the Rainbow Color Bar signal to Video Input Jack.
2. Select SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the minimum (C0).
3. Connect the Oscilloscope to Pin 5 of P6001 on the Main C.B.A. or TP49 on the CRT C.B.A.
4. Select SUB TINT in EVR adjustment mode and adjust so that level A and B should be equal in amplitude.

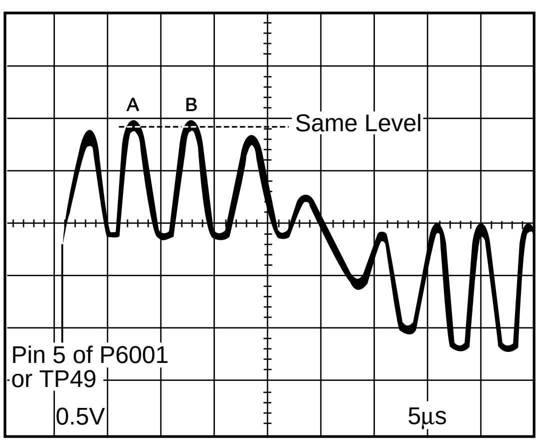


Fig. E8-1

5. Select SUB COLOR in EVR adjustment mode and adjust so that the level C is (1.40 +/- 0.15Vp-p: **Model A,B,C,D,E,F**) or (1.50 +/- 0.15Vp-p: **Model G,H,I,J,K**).

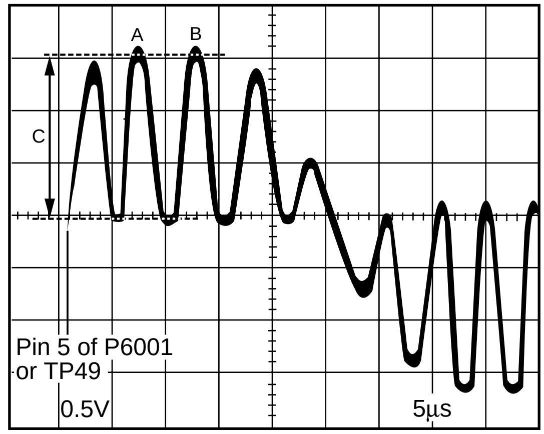


Fig. E8-2

6. Select SUB BRIGHT in EVR adjustment mode and reset to the original value.

Note:
After "SUB COLOR/SUB TINT ADJUSTMENT" is complete, perform as follows.

- Write the same value of SUB COLOR (Address 00) to VV COLOR (Address 12).
- Write the same value of SUB TINT (Address 01) to VV TINT (Address 13) .

PURITY ADJUSTMENT

Purpose:
To set the uniform white over the whole screen.

Symptom of Misadjustment:
The white screen will vary from area to area.

Test Point	**:**	**----------**
Adjustment	**:**	**Pair of 4-Pole Convergence Magnet Rings, Pair of 6-Pole Convergence Magnet Rings, Pair of Purity Magnet Rings, Deflection Yoke (CRT Unit), G CUT -OFF (EVR)**
Specification	**:**	**Refer to descriptions below.**
Input	:	Video Input Jack Crosshatch Pattern Signal, White Pattern Signal
Mode	:	STOP
Equipment	:	Degaussing Coil, NTSC Video Pattern Generator, White Pattern Generator

1. Remove the wedges from the CRT.
2. Slide the Deflection Yoke forward to the end of the CRT neck.

   (Model: A, B, C, D, E, F, I, J)
   Set the Convergence Yoke as specified.
3. Power the unit "ON" and degauss the CRT by the Degaussing Coil.
4. Supply the Crosshatch Pattern Signal to Video Input Jack.
5. Turn the pair of 4-Pole Convergence Magnet Rings so that B and R at the center of CRT overlap each other.
6. Turn the pair of 6-Pole Convergence Magnet Rings so that B and R which overlapped each other in Step 5 overlap G.
7. Supply a White Pattern Signal to Video Input Jack.
8. Select G CUT -OFF in EVR adjustment mode and adjust it to become to the minimum level. Turn the Pair of Purity Magnet Rings so that the distorted color areas are approximately across from each other.
   Slide the Deflection Yoke back slightly (without rotating it) until the distorted color areas disappear from the screen.
9. Supply a Crosshatch Pattern Signal to Video Input Jack again. Confirm that the Center Bar is at the horizontal center line of the CRT and the V-Center Bar is at the vertical center line of the CRT. Then, tighten the Expansion Screw.
10. Press DISPLAY key (Service Switch) on the remote control for collapse scan. (Refer to How to Enter Service Mode.)
    Select G CUT -OFF in EVR adjustment mode and Adjust so that the horizontal line is white.
11. Press DISPLAY key on the remote control again to return for full frame scan. Make sure that the entire screen is white. If not, adjust G DRIVE and B DRIVE in EVR adjustment mode.

Note:
Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value.

(Model: A, B, C, D, E, F, I, J)

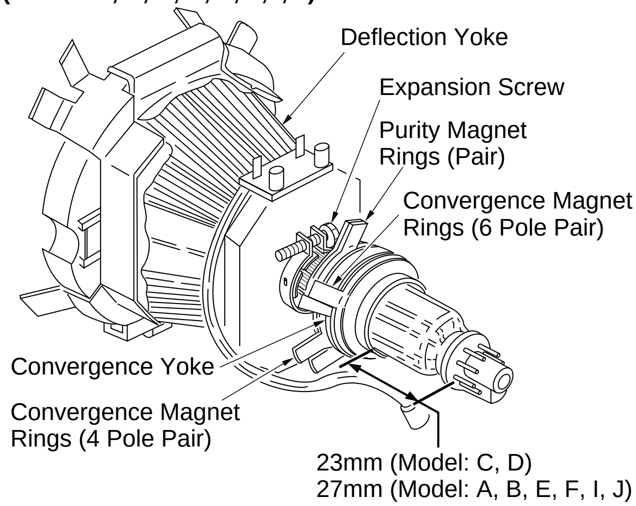


Fig. E9-1

(Model: G, H, K)

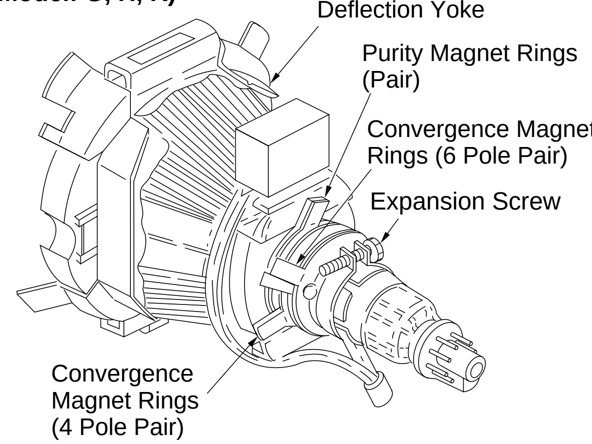


Fig. E9-2

STATIC CENTRAL CONVERGENCE ADJUSTMENT

Purpose:
To set the uniform convergence over the whole screen.

Symptom of Misadjustment:
The convergence on the screen will vary from the center portion to the surrounding edges.

Test Point : ----------
Adjustments : Pair of 4-Pole Convergence Magnet Rings, Pair of 6-Pole Convergence Magnet Rings
Specification: Refer to descriptions below.
Input : Video Input Jack
Crosshatch Pattern Signal
Mode : STOP
Equipment : NTSC Video Pattern Generator

1. Supply a Crosshatch Pattern Signal to the Video Input Jack.
2. Turn the Pair of 4 - Pole Convergence Magnet Rings so that B and R, at center of CRT, overlap each other.
3. Turn the Pair of 6 - Pole Convergence Magnet Rings so that B and R, that overlapped each other in step 2 overlaps G.

DYNAMIC CONVERGENCE ADJUSTMENT

Purpose:
To set the uniform convergence over the whole screen.

Symptom Misadjustment:
The convergence on the screen will vary at the sides of the CRT.

Test Point : ----------
Adjustment : Deflection Yoke (CRT Unit)
Specification: Refer to descriptions below.
Input : Video Input Jack
Crosshatch Pattern Signal,
White Pattern Signal
Mode : STOP
Equipment : NTSC Video Pattern Generator,
White Pattern Generator

1. Supply a Crosshatch Pattern Signal to the Video Input Jack.
2. Hold the Deflection Yoke and wiggle it up and down to produce the correct Crosshatch Pattern position.

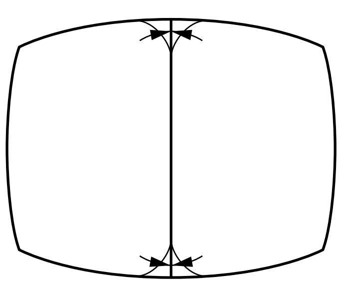


Fig. E10-1

3. Hold Deflection Yoke and wiggle it horizontally (right to left) to produce the correct Crosshatch Pattern position.

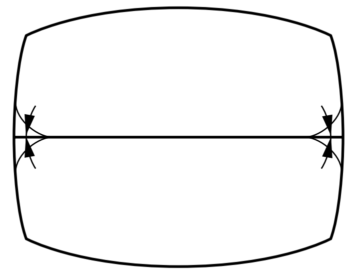


Fig. E10-2

4. Insert three wedges to maintain the correct Crosshatch Pattern Position.

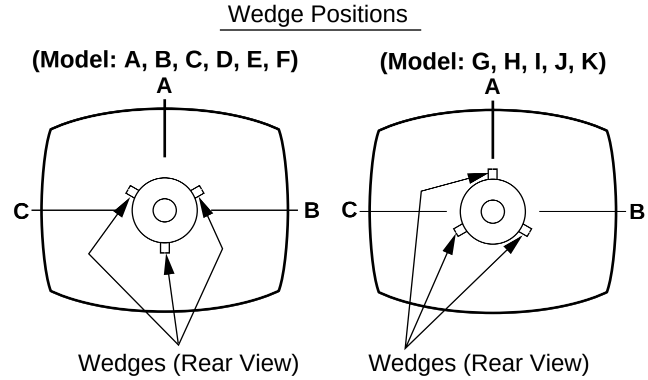


Fig. E10-3

(Confirmation of white)
1. Supply a White Pattern Signal to the Video Input Jack.
2. Confirm that the purity is still correct.
3. If the purity is not acceptable, readjust the purity.

4. **(Model: G, H, I, J, K)**
If the convergence error is more than 1.5mm (0.06 inch) from the green dot at each corner, adjust the convergence at that corner with a Permalloy Magnetic Strip. Insert a permalloy strip into the gap between the Deflection Yoke and the CRT along a diagonal line of the CRT bell. Adjust it for the best possible convergence. Use one Permalloy Magnetic Strip in each corner if necessary.
Permalloy Magnetic Strip Part Number (TSM10032-2).

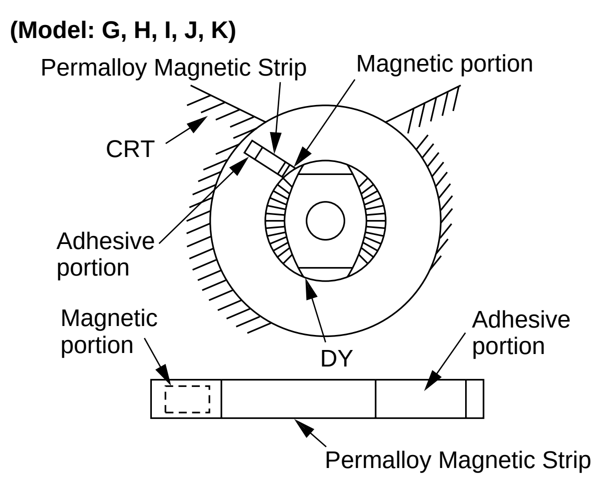


Fig. E10-4

V. HEIGHT/H. POSITION ADJUSTMENT

Purpose :
To set the standard vertical and horizontal picture size.

Symptom of Misadjustment :
The picture size is on the vertical and horizontal axis is abnormal.

Test Point : ----------
Adjustment : V SIZE (EVR),
H CENTER (EVR)
Specification : Refer to descriptions below.
Input : Video Input Jack
Monoscope Pattern Signal
Mode : STOP
Equipment : NTSC Video Pattern Generator

(Model: A, B, C, D, E, F)

1. Supply a Monoscope Pattern Signal to the Video Input Jack.
2. Select V SIZE in EVR adjustment mode and adjust so that the top 3rd line is just in view.
3. Confirm that the 10th dotted line is in view and that the 11th line is out of view.
   If the lines are not positioned correctly, readjust V SIZE so that the top 3rd line is within +/-2mm from the top edge of the screen. Confirm that the 10th dotted line is in view and that the 11th line is out of view.
4. Select H CENTER in EVR adjustment mode and adjust so that A is approximately equal to width B.

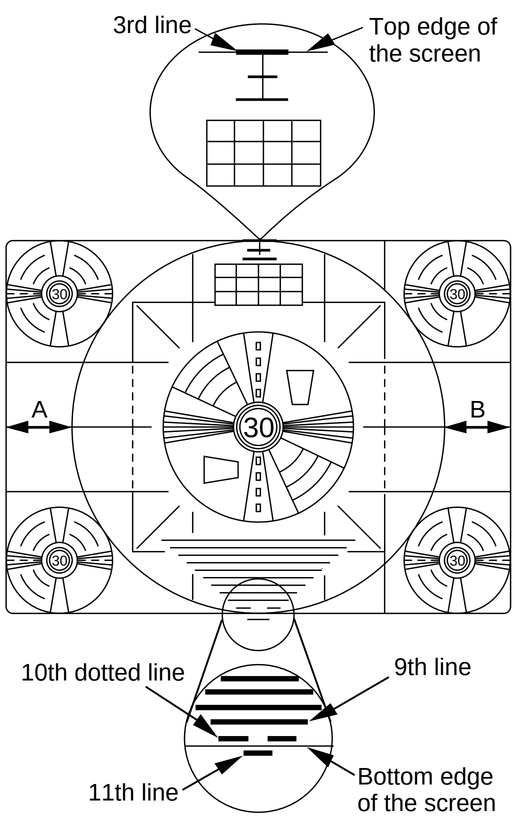


Fig. E11-1

(Model: G, H, I, J, K)

1. Supply a Monoscope Pattern Signal to the Video Input Jack.
2. Select V SIZE in EVR adjustment mode and adjust so that the top 4th line is just in view.
3. Confirm that the bottom 3rd line is in view and that the bottom 4th line is out of view.
   If the lines are not positioned correctly, readjust V SIZE so that the 11th line is just in view.
4. Select H CENTER in EVR adjustment mode and adjust so that A is approximately equal to width B.

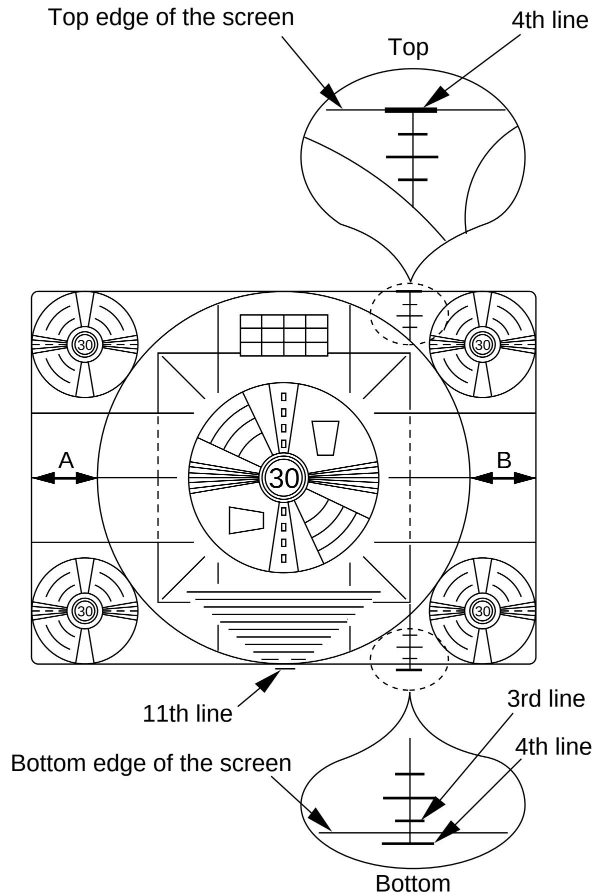


Fig. E11-2

WHITE BALANCE ADJUSTMENT

Purpose:
To set the standard white level for each color temperature.

Symptom of Misadjustment :
White becomes bluish or reddish.

Test Point : TP50 (CRT C.B.A)
Adjustment : FOCUS CONTROL (Flyback Transformer), SCREEN CONTROL (Flyback Transformer), SUB BRIGHT (EVR) G DRIVE (EVR), B DRIVE (EVR), R CUT -OFF (EVR), G CUT -OFF (EVR), B CUT -OFF (EVR),
Specification: Refer to descriptions below.
Input : Video Input Jack Monoscope Pattern Signal, White Pattern Signal
Mode : STOP
Equipment : NTSC Video Pattern Generator, White Pattern Generator, Oscilloscope,

1. Supply a Monoscope Pattern Signal to the Video Input Jack.
2. Connect the Oscilloscope to TP50 on the CRT C.B.A. (Use TP47E for GND.)
3. Select SUB BRIGHT and move the shaded area to the value in EVR adjustment mode.
4. Adjust the FOCUS CONTROL on the Flyback Transformer so that the center of picture is the sharpest.
5. Press DISPLAY key (Service Switch) on the remote control for collapse scan. (Refer to How to Enter Service Mode.)
6. Turn the SCREEN CONTROL on Flyback Transformer fully counterclockwise.
7. Adjust SUB BRIGHT in EVR adjustment mode so that the level A is (140 +/- 5VDC: **Model A, B, C, D, E, F**) or (170 +/ - 5VDC **Model: G, H, I, J, K**).

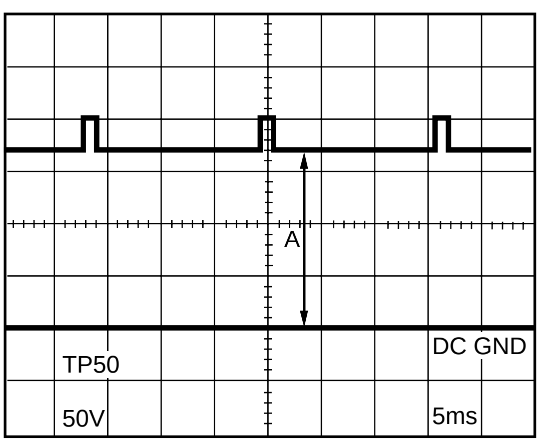


Fig. E12

8. Turn the SCREEN CONTROL on the Flyback Transformer clockwise carefully and stop at the point where any color is first observed.
9. In EVR adjustment mode, select the two colors not observed in step 8 from the following control functions (B CUT -OFF, G CUT -OFF, or R CUT -OFF) and adjust so that the horizontal line becomes white.
   For example, if the horizontal line appeared red in step 8, select and adjust the B CUT -OFF and G CUT -OFF.
10. Supply a White Pattern Signal to the Video Input Jack.
11. Press DISPLAY key on the remote control again to return for full frame scan.
12. Select G DRIVE and B DRIVE in EVR adjustment mode and adjust so that the entire screen is white.
13. Select SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the minimum (C0) and while turning SUB BRIGHT value from minimum (C0) up to maximum (3F), confirm that the screen is tracking the White Pattern properly.
    Repeat the above steps 5, 9, 11, and 12 until the screen is properly tracking the White Pattern.

Note:
Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value.

SUB BRIGHTNESS ADJUSTMENT

Purpose :
To set the optimum brightness level.

Symptom of Misadjustment :
The picture is too white or too black.

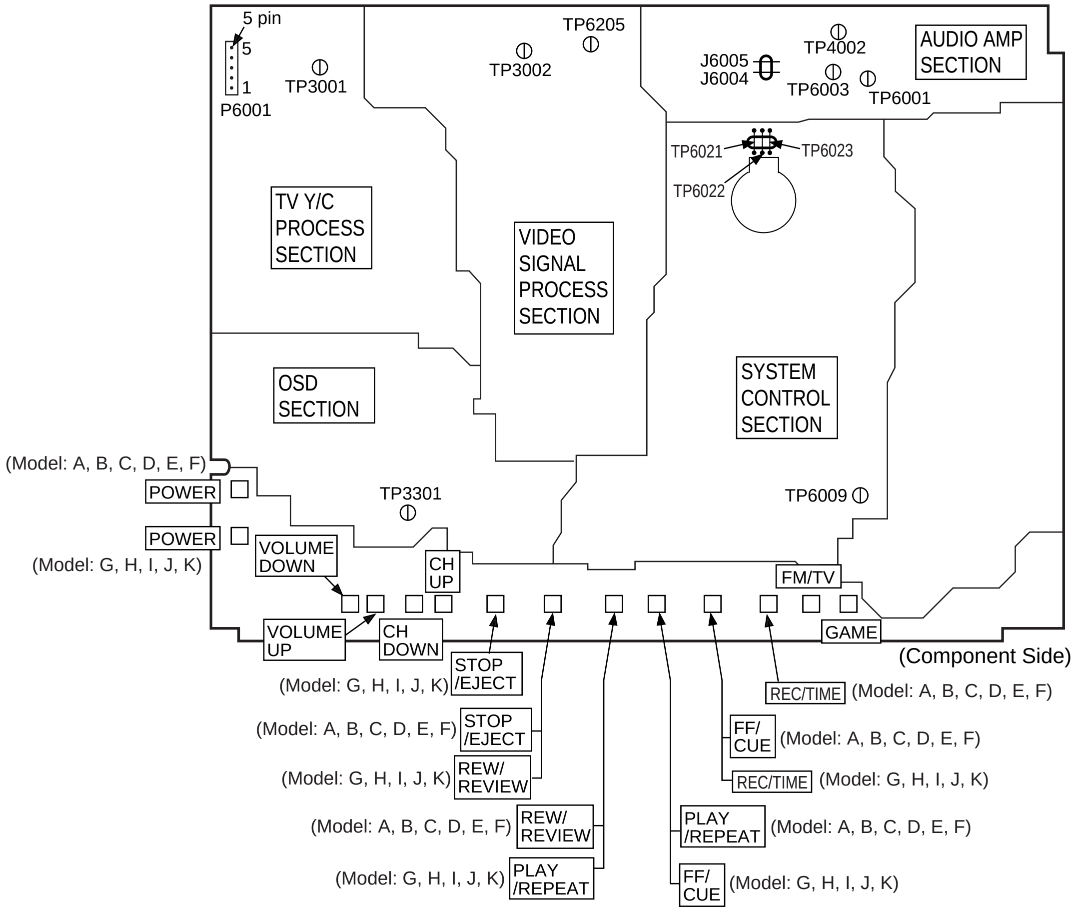
Note:
Perform this adjustment in a darkened room.

Test Point : ----------
Adjustment : SUB BRIGHT (EVR)
Specification: Refer to descriptions below.
Input : ----------
Mode : STOP

1. Do not input any signal to the unit.
2. Set INPUT SELECT item to LINE in SET UP TV menu to display black screen.
3. Select SUB BRIGHT in EVR adjustment mode, and adjust so that the black screen starts to turn grey (lighting only).

TEST POINTS AND CONTROL LOCATION

Main C.B.A.

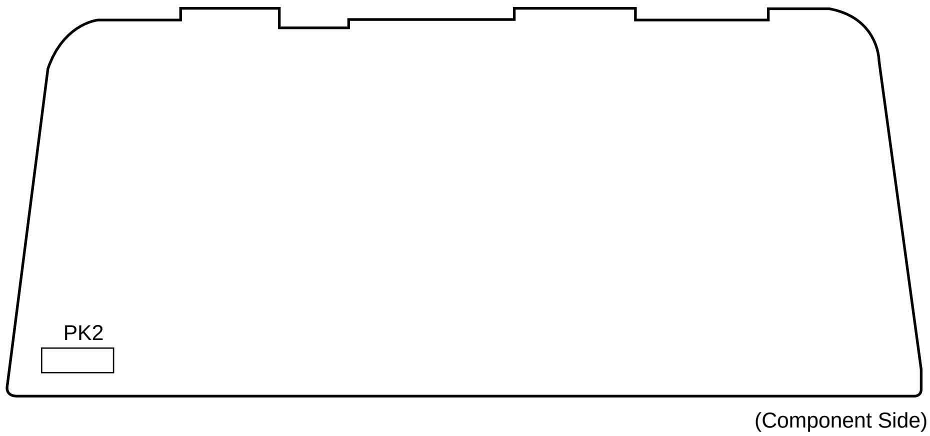


FUNCTION OF IMPORTANT TEST POINTS		
TP3001	Video Signal to Jack	
TP3002	REC/PB Video envelope signal	
TP4002	Normal Audio signal	
TP6001	Service Test Point (inhibit sensors)	
TP6003	defeat Auto tracking function (connect to +5V(TP6009))	
	PG Shifter Adjustment Mode (connect to GND)	
TP6009	+5V	
TP6205	Head SW.	
TP6021	Mode Select SW. Position	Mode Position (A)
TP6022		Mode Position (B)
TP6023		Mode Position (C)

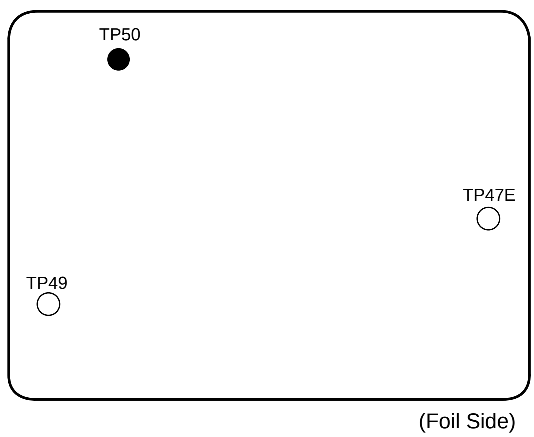
Test Point Information

- ● Test Point with a Test Pin.
- ⦶ Test Point with a jumper wire across a hole in the P.C.B.
- ○ Test Point with no Test Pin.

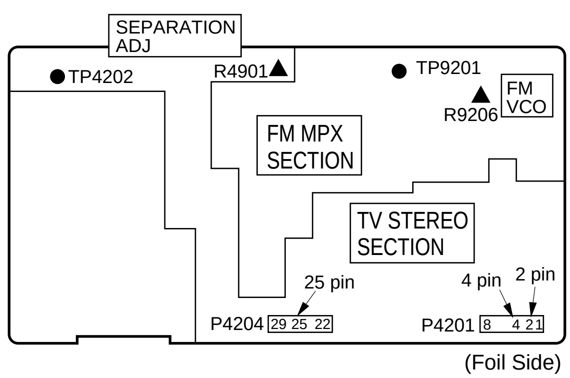
TV Main C.B.A.



CRT C.B.A.



TV Stereo C.B.A. (Model: K)



SCHEMATIC DIAGRAMS AND CIRCUIT BOARD LAYOUT

SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES

1. **Important safety notice**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components. Use only the specified parts.
2. Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since this drawing was prepared.
3. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.
4. Parts different in shape or size may be used.
   However, only interchangeable parts will be supplied as service replacement parts.
5. Test point information
   ⦶ :Test point with a jumper wire across a hole in P.C.B.
   ▭→ :Test point with a component lead on the foil side.
   ⊘ :Test point with no test pin.
   ● :Test point with a test pin.

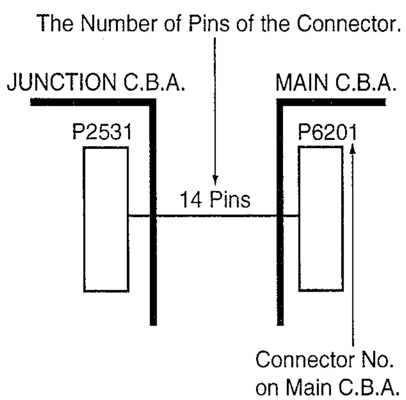
Schematic Diagram Notes

1. Indication for Zener Voltage of Zener Diodes
   The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

   Example:
   (6.2V)......Zener Voltage

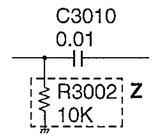
2. How to identify Connectors
   Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to, in other words, its counter part.
   Use the interconnection schematic diagram to find the connection between associated connectors.

   Example:
   The connections between C.B.A.s are shown below.



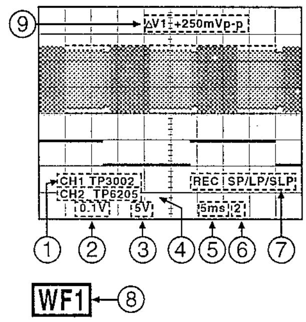
3. Parts enclosed in dashed lines marked "Z" are not used in any models included in this service manual.

   Example:



Signal Waveform Note

How to read Signal Waveform



① Connecting Point
② Volts/Div
③ Volts/Div
④ Connecting Point
⑤ Time/Div
⑥ Trigger Channel of the scope (1:CH1,2:CH2)
⑦ Operation Mode of VCR
⑧ Waveform Point on Schematic
⑨ ΔV1:Peak to Peak

Voltage Chart Note

Voltage Measurement
a. Color bar signal in SP mode.
b. ---:Unmeasurable or not necessary to measure.

Circuit Board Layout Note

Circuit Board Layout shows components installed for various models.
For proper parts content for the model you are servicing,
please refer to the schematic diagram and parts list.

Comparison chart of models & marks

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

Note : Refer to item 3 of Schematic Diagram Notes for mark "Z".

SCHEMATIC DIAGRAMS
MAIN I (POWER SUPPLY / SYSTEM CONTROL / SERVO) SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

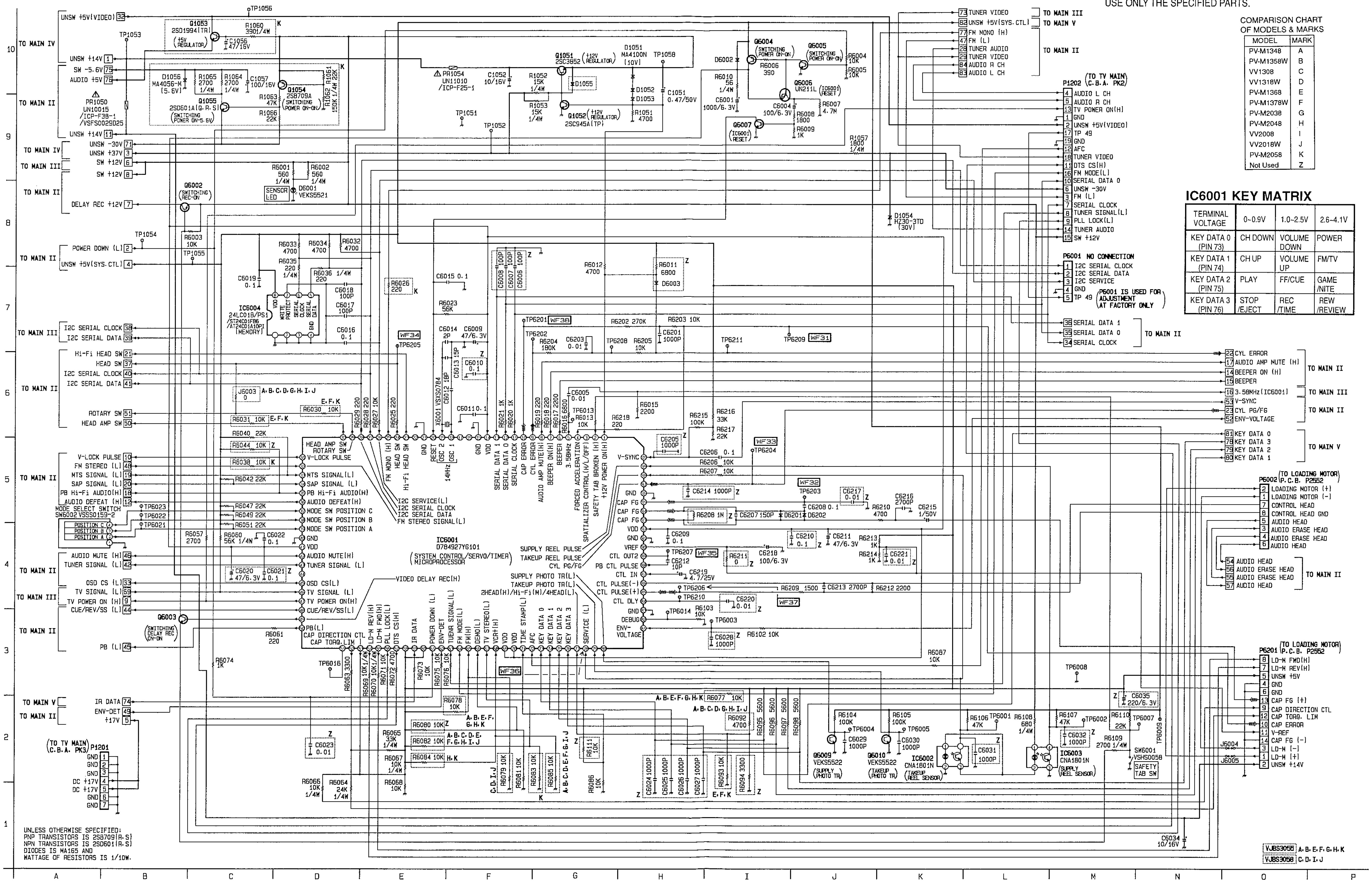
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

IC6001 KEY MATRIX

TERMINAL VOLTAGE	0~0.9V	1.0~2.5V	2.6~4.1V
KEY DATA 0 (PIN 73)	CH DOWN	VOLUME DOWN	POWER
KEY DATA 1 (PIN 74)	CH UP	VOLUME UP	FM/TV
KEY DATA 2 (PIN 75)	PLAY	FF/CUE	GAME /NITE
KEY DATA 3 (PIN 76)	STOP /EJECT	REC /TIME	REW /REVIEW



MAIN II (SIGNAL PROCESS / OSD /AUDIO AMP) SCHEMATIC DIAGRAM

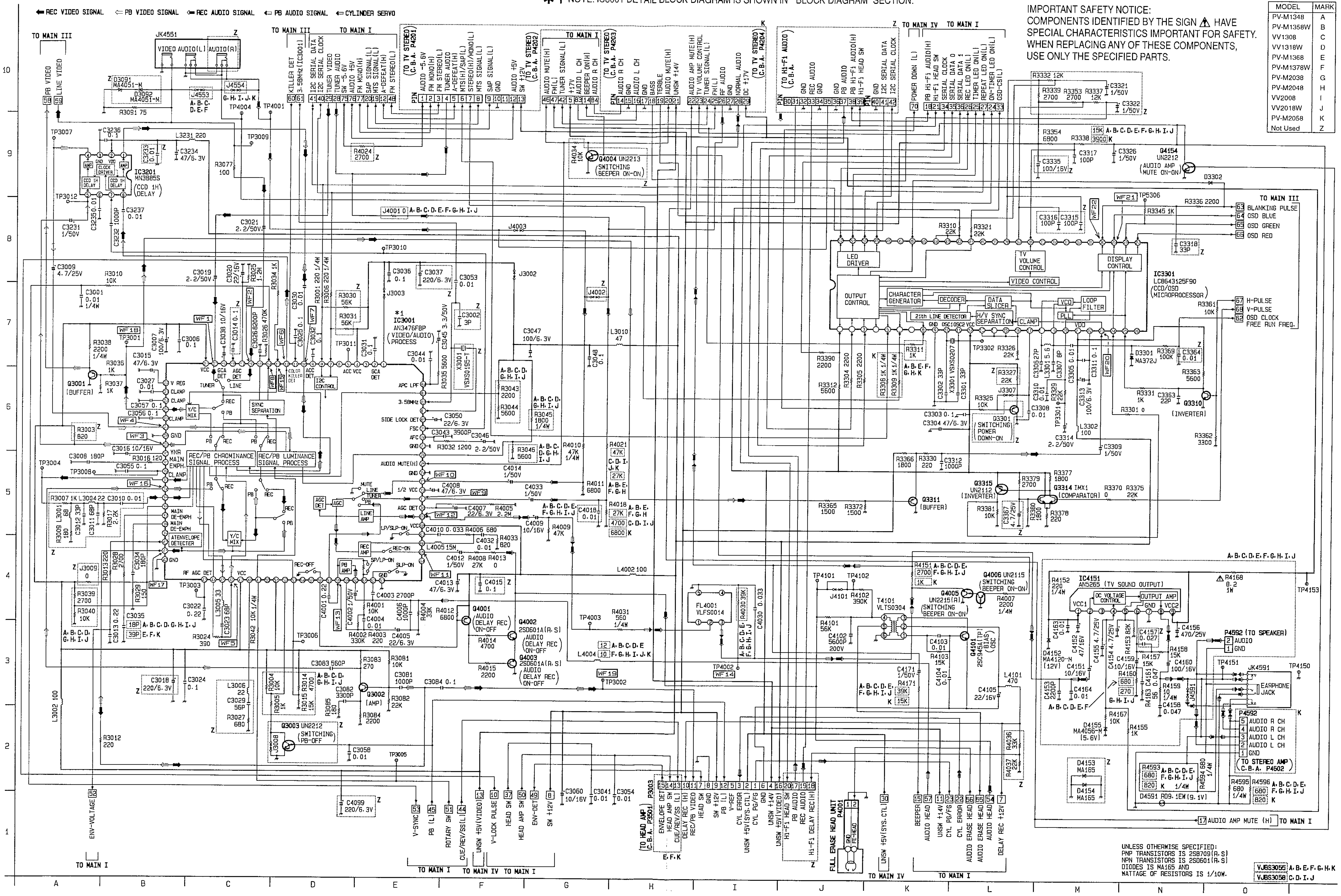
✱1 NOTE: IC3001 DETAIL BLOCK DIAGRAM IS SHOWN IN "BLOCK DIAGRAM" SECTION.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z



MAIN III (TV Y/C PROCESS) SCHEMATIC DIAGRAM

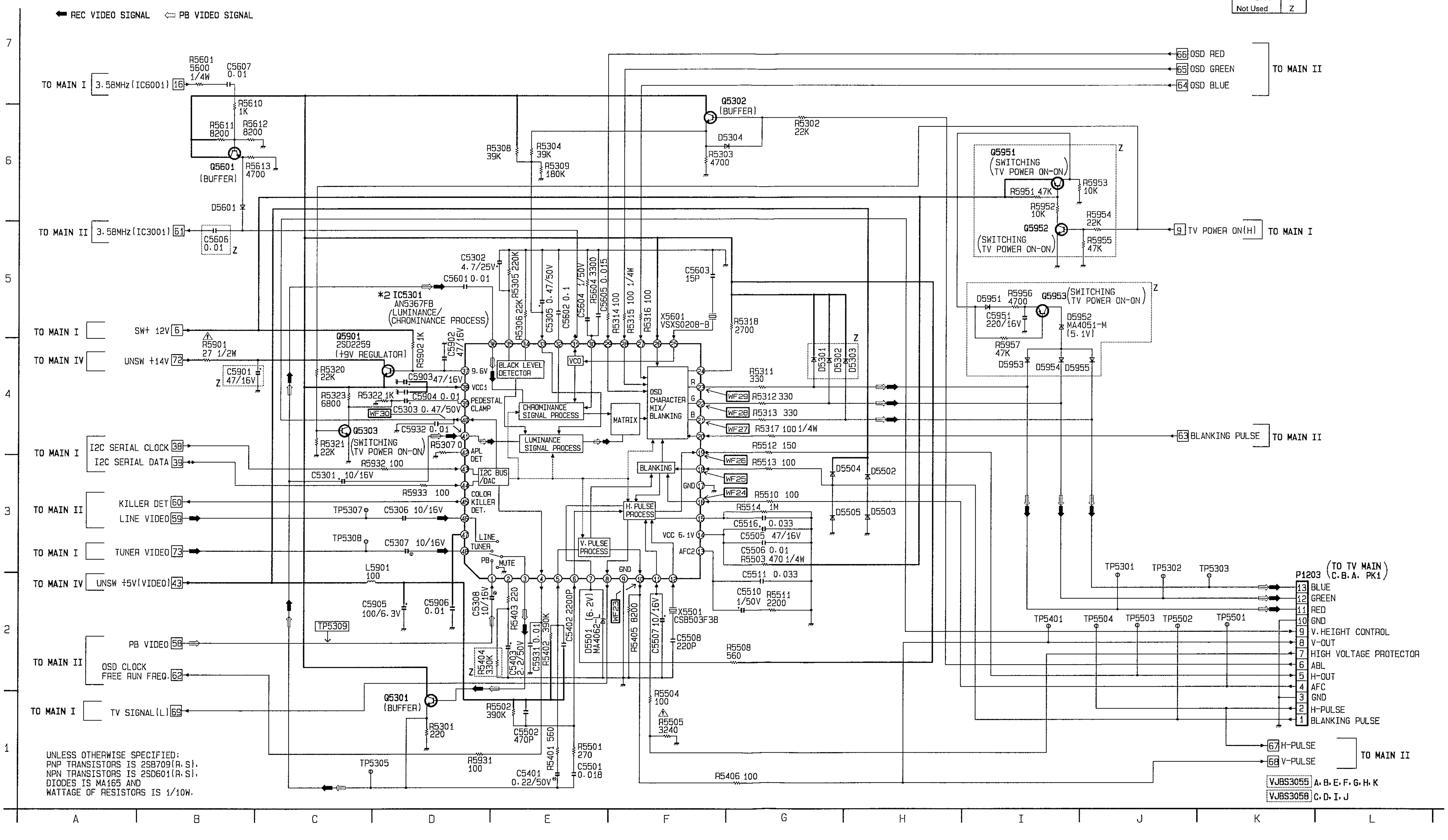
*2 NOTE: IC5301 DETAIL BLOCK DIAGRAM IS SHOWN IN "BLOCK DIAGRAM" SECTION.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z



UNLESS OTHERWISE SPECIFIED:
PNP TRANSISTORS IS 2SB709(R,S).
NPN TRANSISTORS IS 2SD601(R,S).
DIODES IS MA165 AND
WATTAGE OF RESISTORS IS 1/10W.

MAIN IV (POWER SUPPLY) SCHEMATIC DIAGRAM

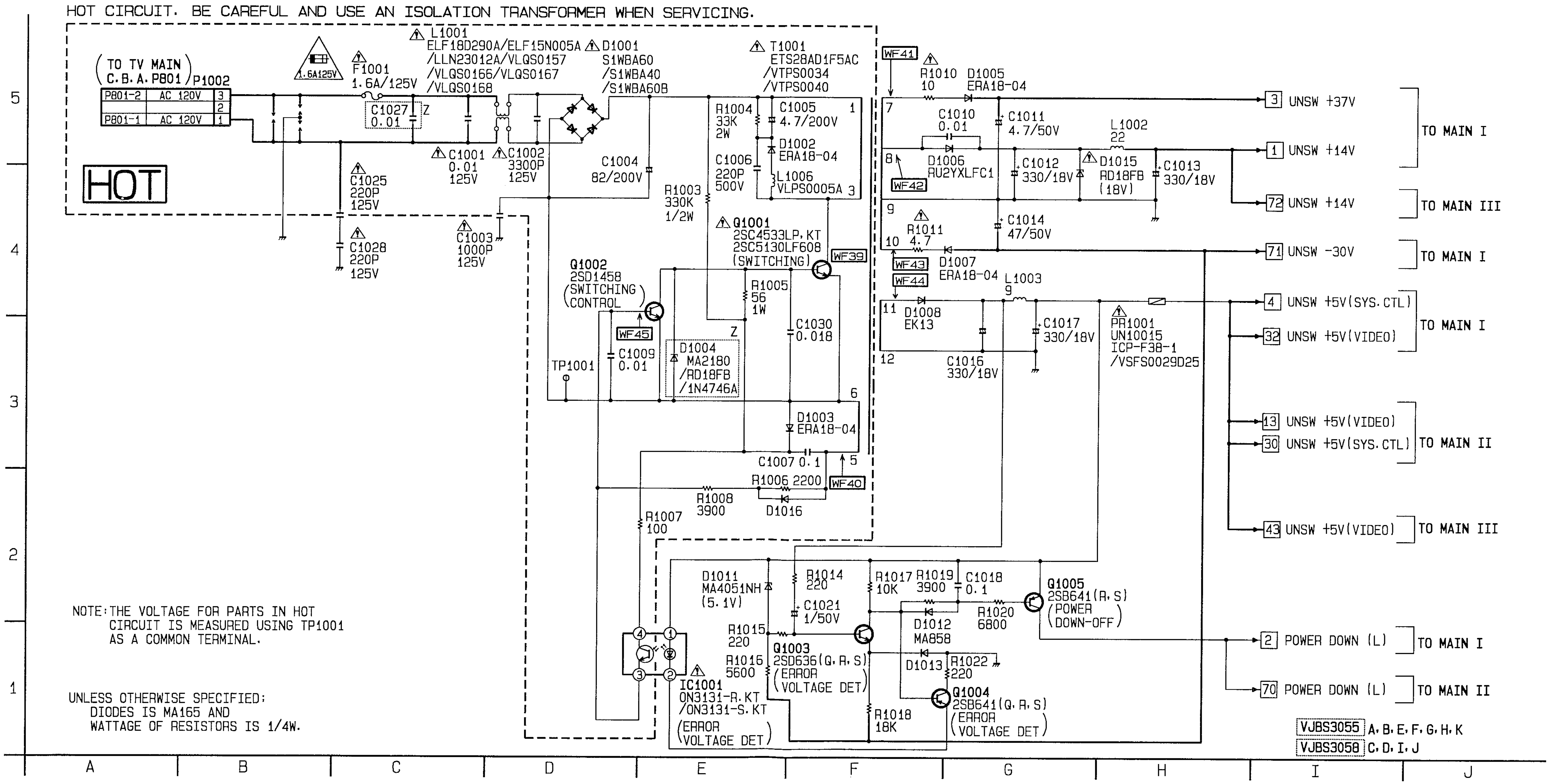
COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

CAUTION:FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLASE ONLY WITH THE SAME TYPE 1.6A 125V FUSE.
ATTENTION:POUR UNE PROTECTION CONTINUE LES RISQUES D'INCENDIE N'UTILISERQUE DES FUSIBLE DE M'EME TYPE 1.6A 125V

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

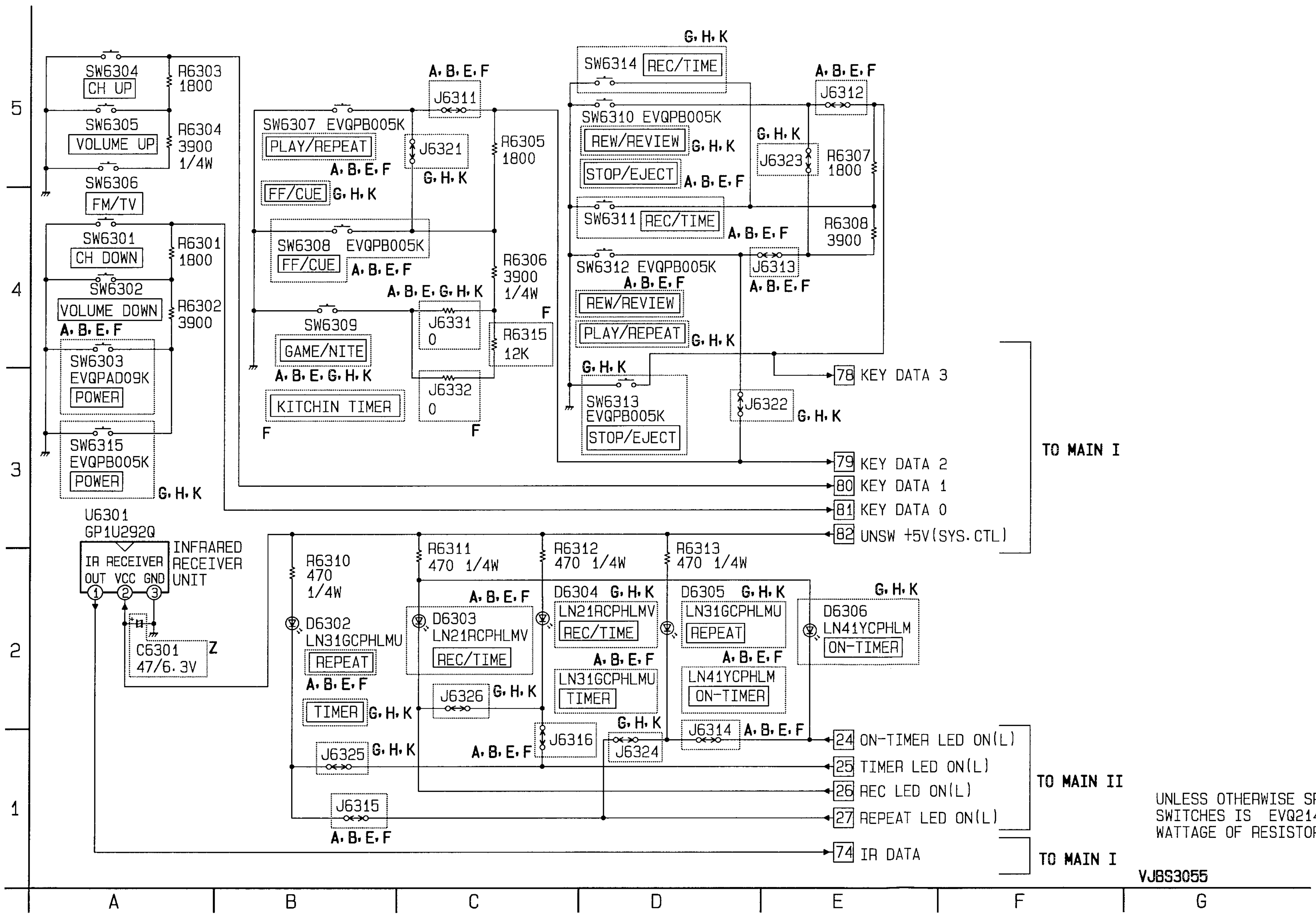


MAIN V (OPERATION) SCHEMATIC DIAGRAM (A,B,E,F,G,H,K)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z



UNLESS OTHERWISE SPECIFIED:
SWITCHES IS EVQ21405R AND
WATTAGE OF RESISTORS IS 1/10W.

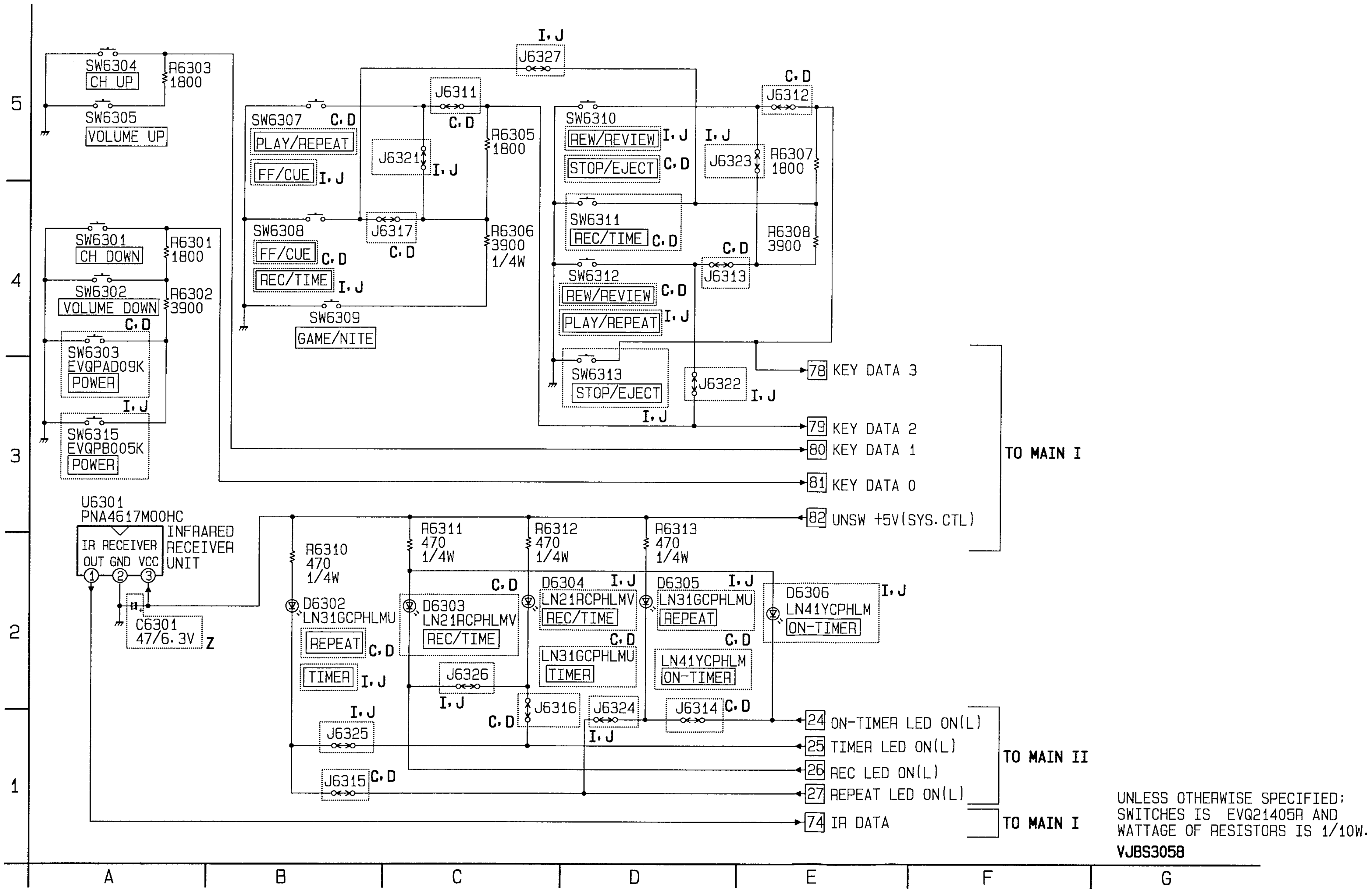
VJBS3055

MAIN V (OPERATION) SCHEMATIC DIAGRAM (C,D,I,J)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCEMATIC SECTION.

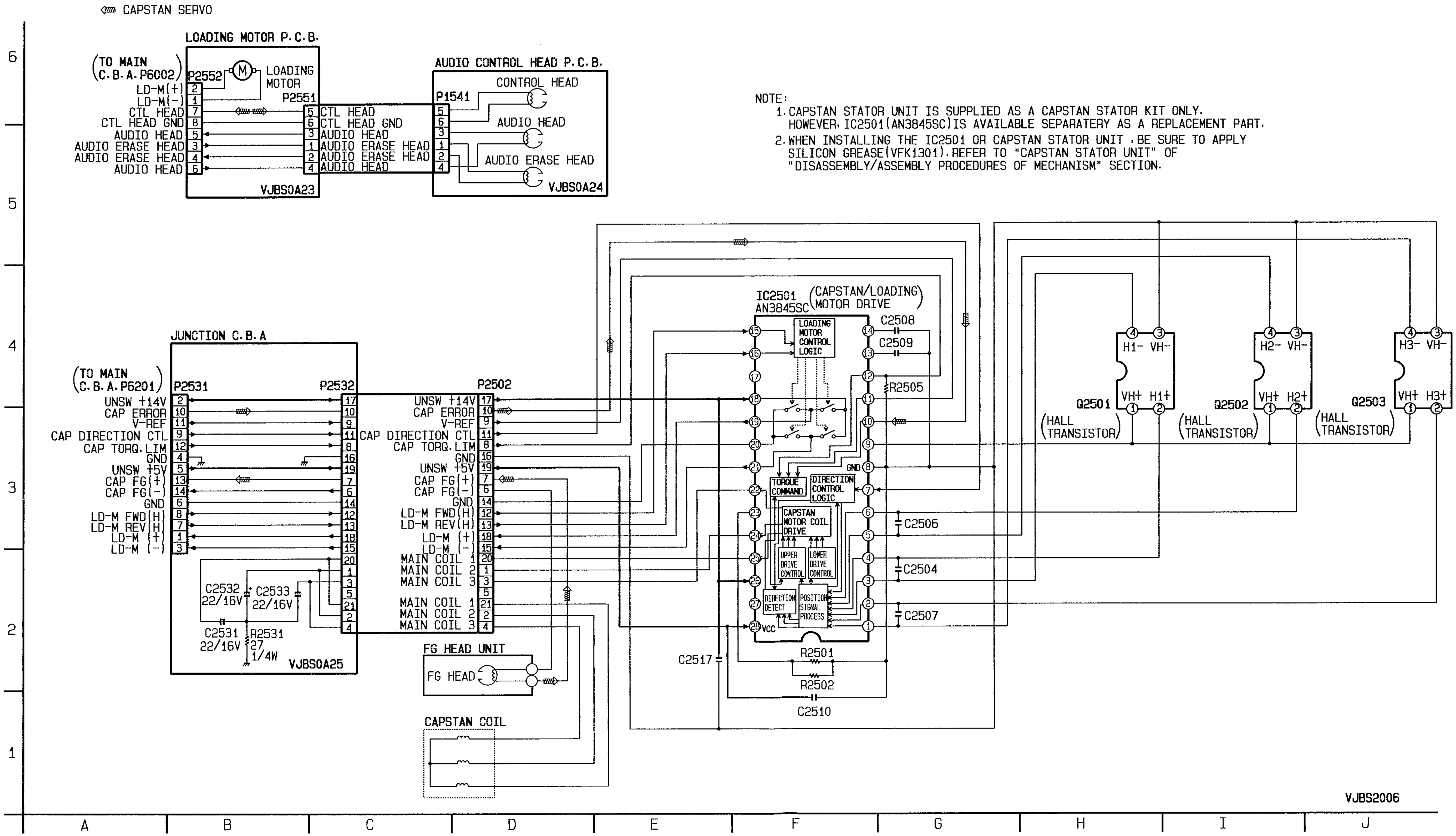
COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z



CAPSTAN STATOR / JUNCTION / LOADING MOTOR / AUDIO CONTROL HEAD SCHEMATIC DIAGRAM

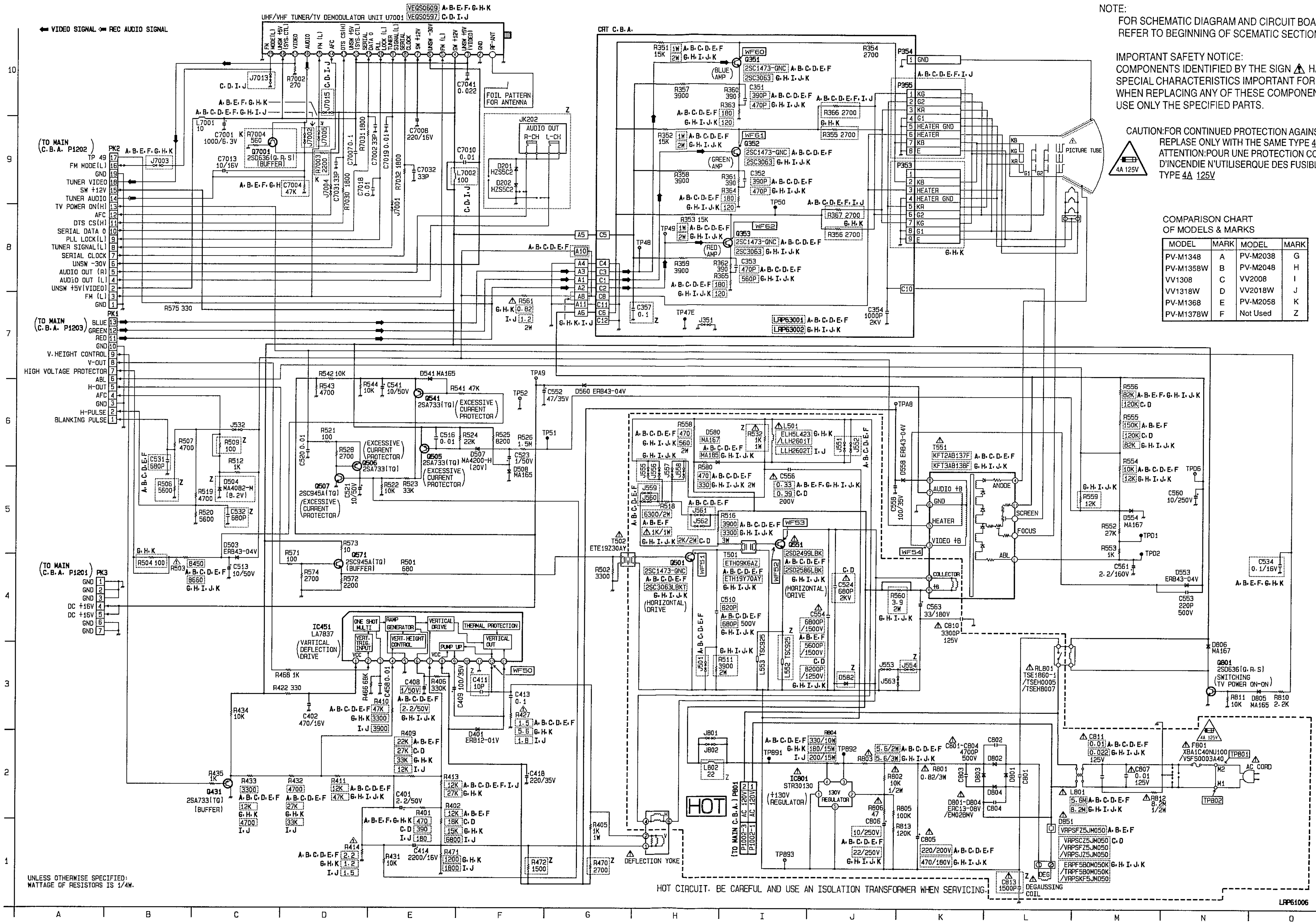
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.



NOTE:

1. CAPSTAN STATOR UNIT IS SUPPLIED AS A CAPSTAN STATOR KIT ONLY. HOWEVER, IC2501(AN3845SC)IS AVAILABLE SEPARATERY AS A REPLACEMENT PART.
2. WHEN INSTALLING THE IC2501 OR CAPSTAN STATOR UNIT, BE SURE TO APPLY SILICON GREASE(VFK1301). REFER TO "CAPSTAN STATOR UNIT" OF "DISASSEMBLY/ASSEMBLY PROCEDURES OF MECHANISM" SECTION.

TV MAIN / CRT SCHEMATIC DIAGRAM



NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

CAUTION:FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLASE ONLY WITH THE SAME TYPE 4A 125V FUSE.
ATTENTION:POUR UNE PROTECTION CONTINUE LES RISQUES D'INCENDIE N'UTILISERQUE DES FUSIBLE DE MEME TYPE 4A 125V

COMPARISON CHART OF MODELS & MARKS

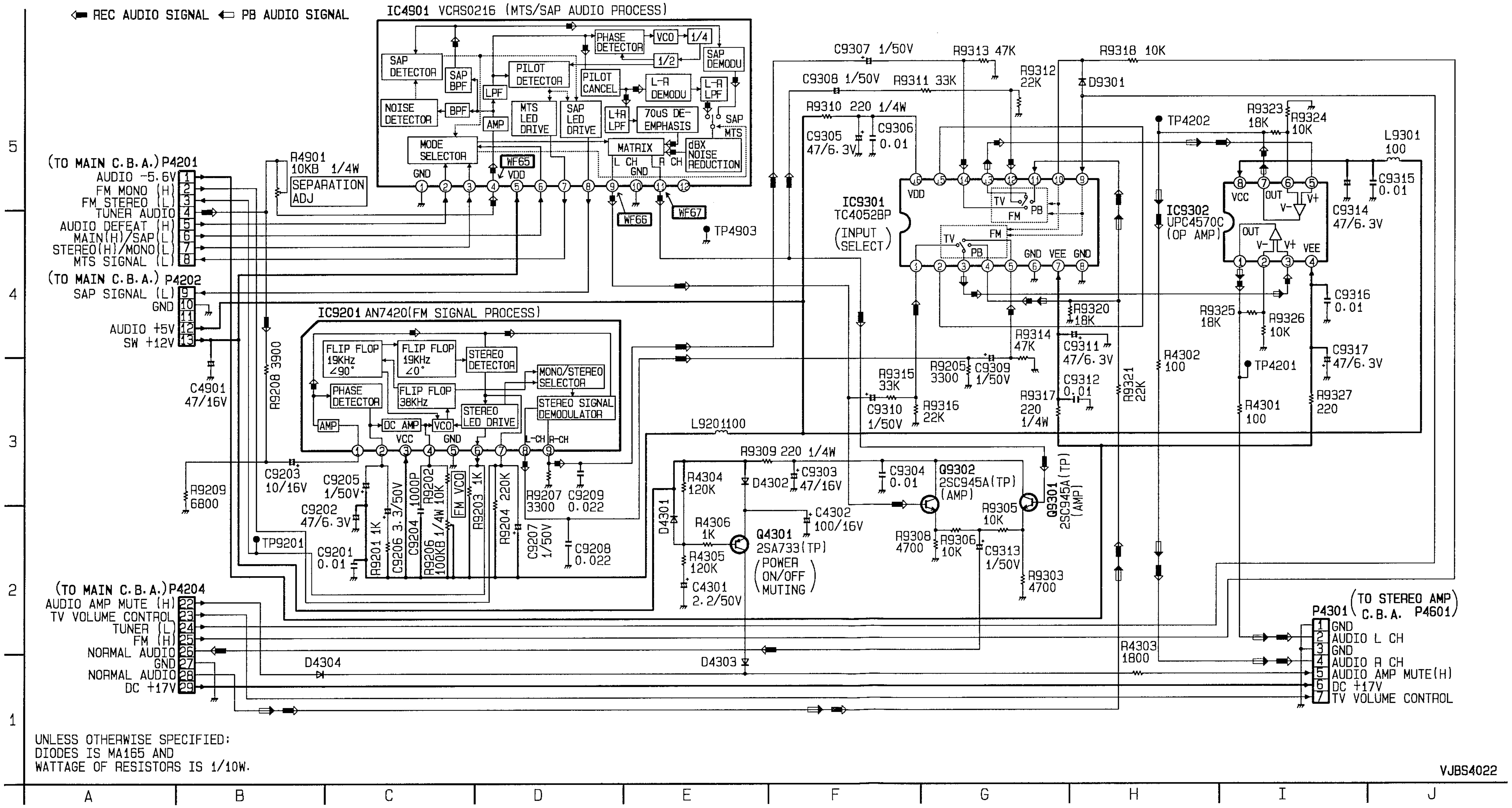
MODEL	MARK	MODEL	MARK
PV-M1348	A	PV-M2038	G
PV-M1358W	B	PV-M2048	H
VV1308	C	VV2008	I
VV1318W	D	VV2018W	J
PV-M1368	E	PV-M2058	K
PV-M1378W	F	Not Used	Z

TV STEREO SCHEMATIC DIAGRAM (K)

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.



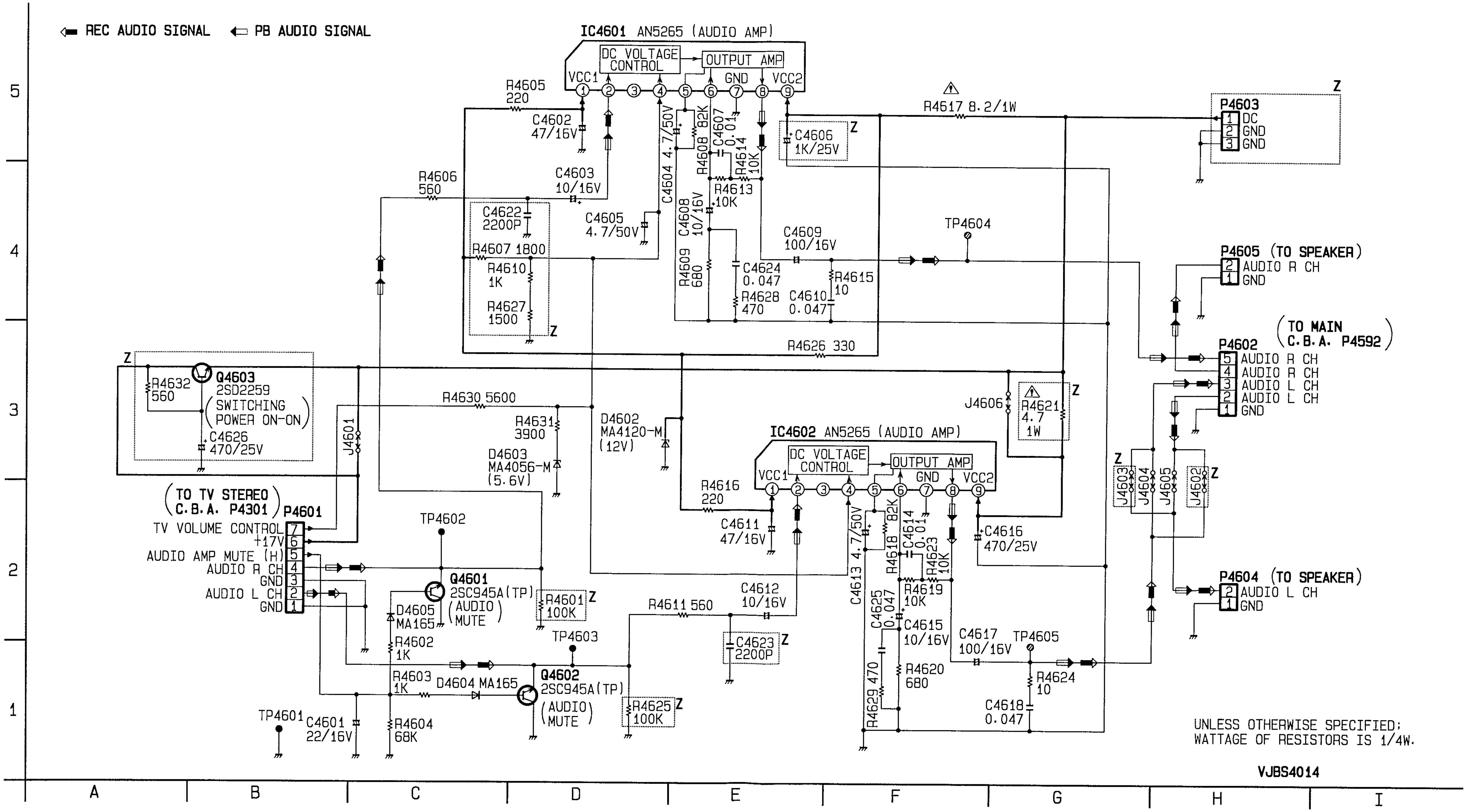
STEREO AMP SCHEMATIC DIAGRAM (K)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

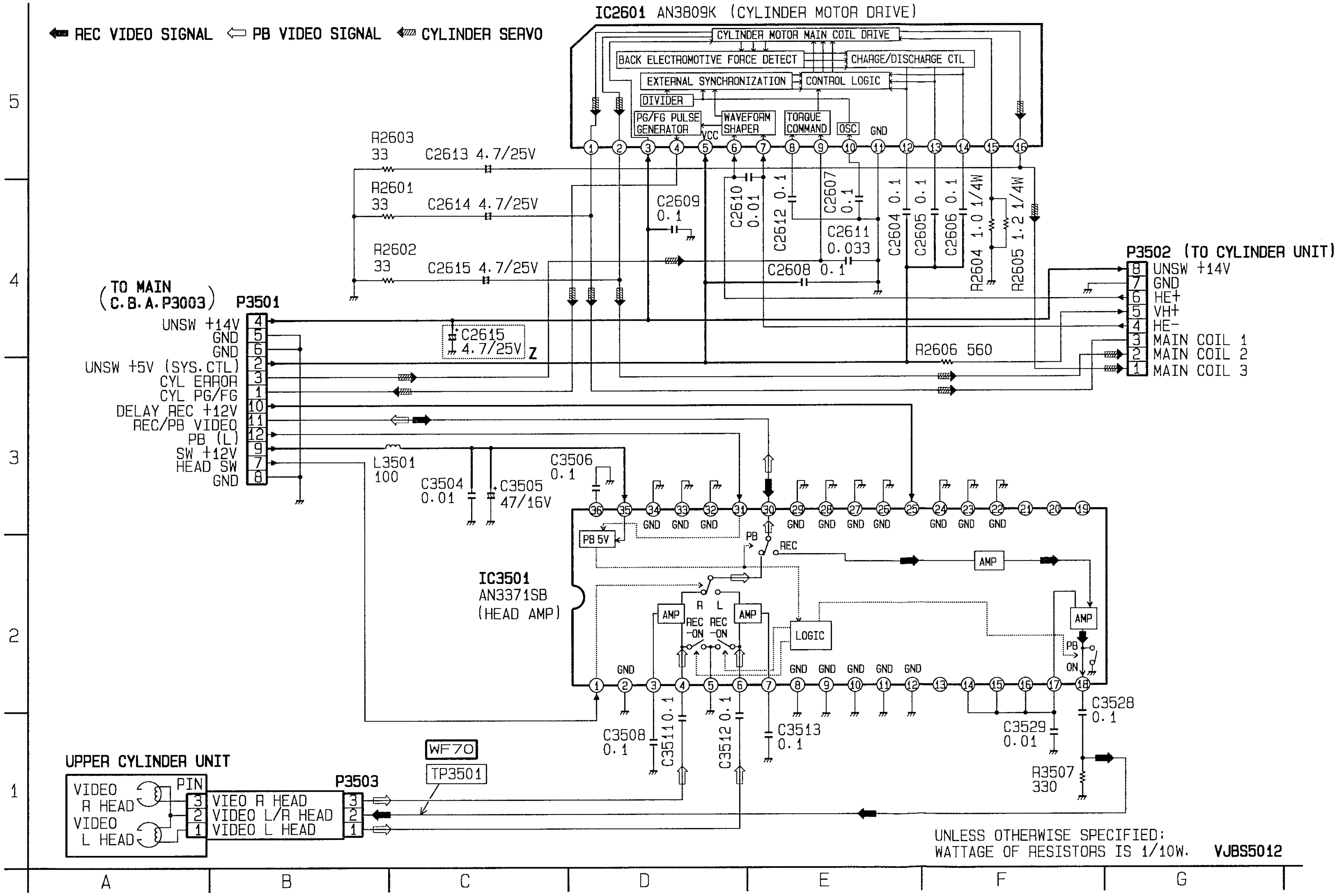
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z



HEAD AMP SCHEMATIC DIAGRAM (A,B,C,D,G,H,I,J)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.



COMPARISON CHART
OF MODELS & MARKS

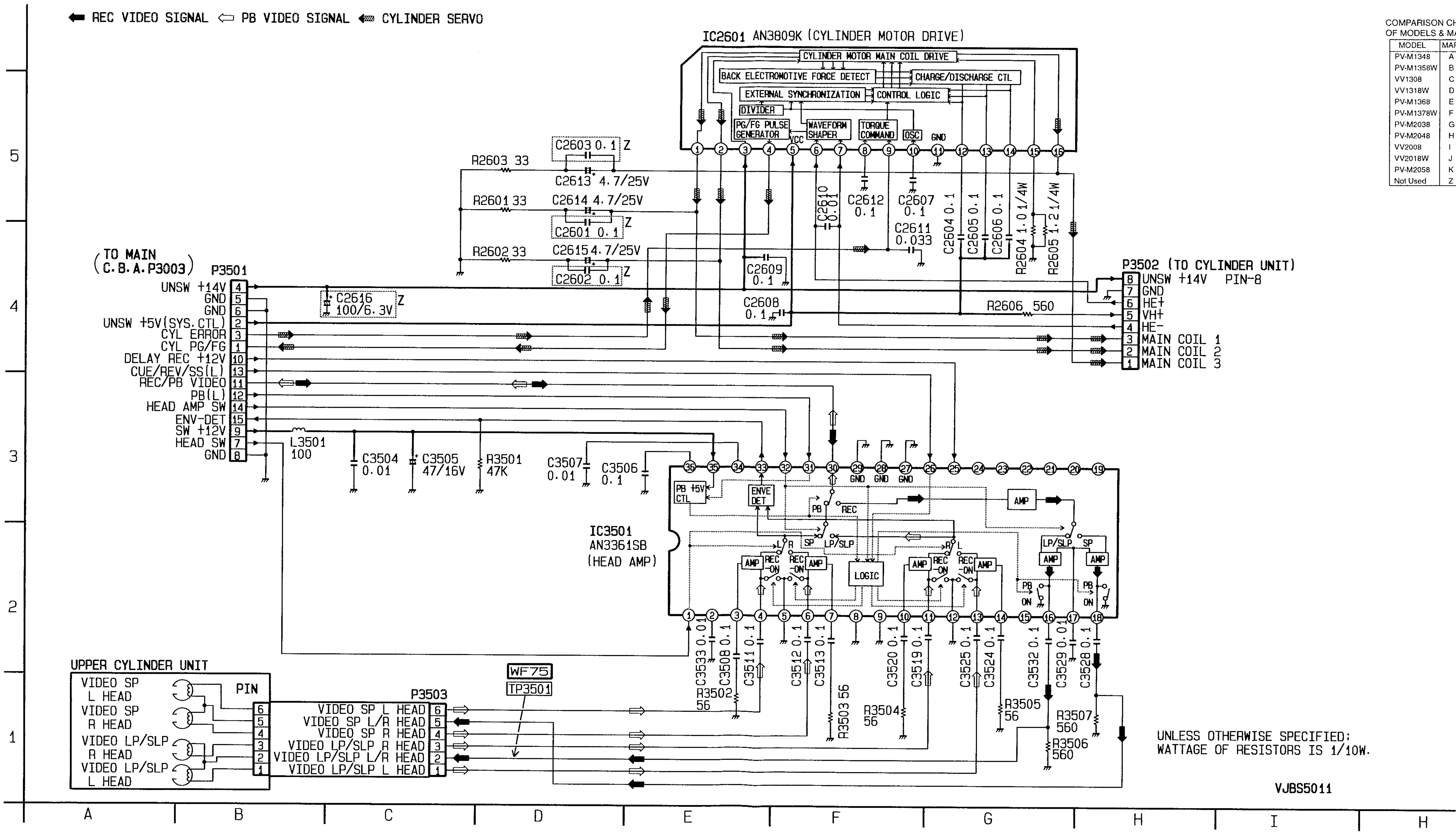
MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

HEAD AMP SCHEMATIC DIAGRAM (E,F,K)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z



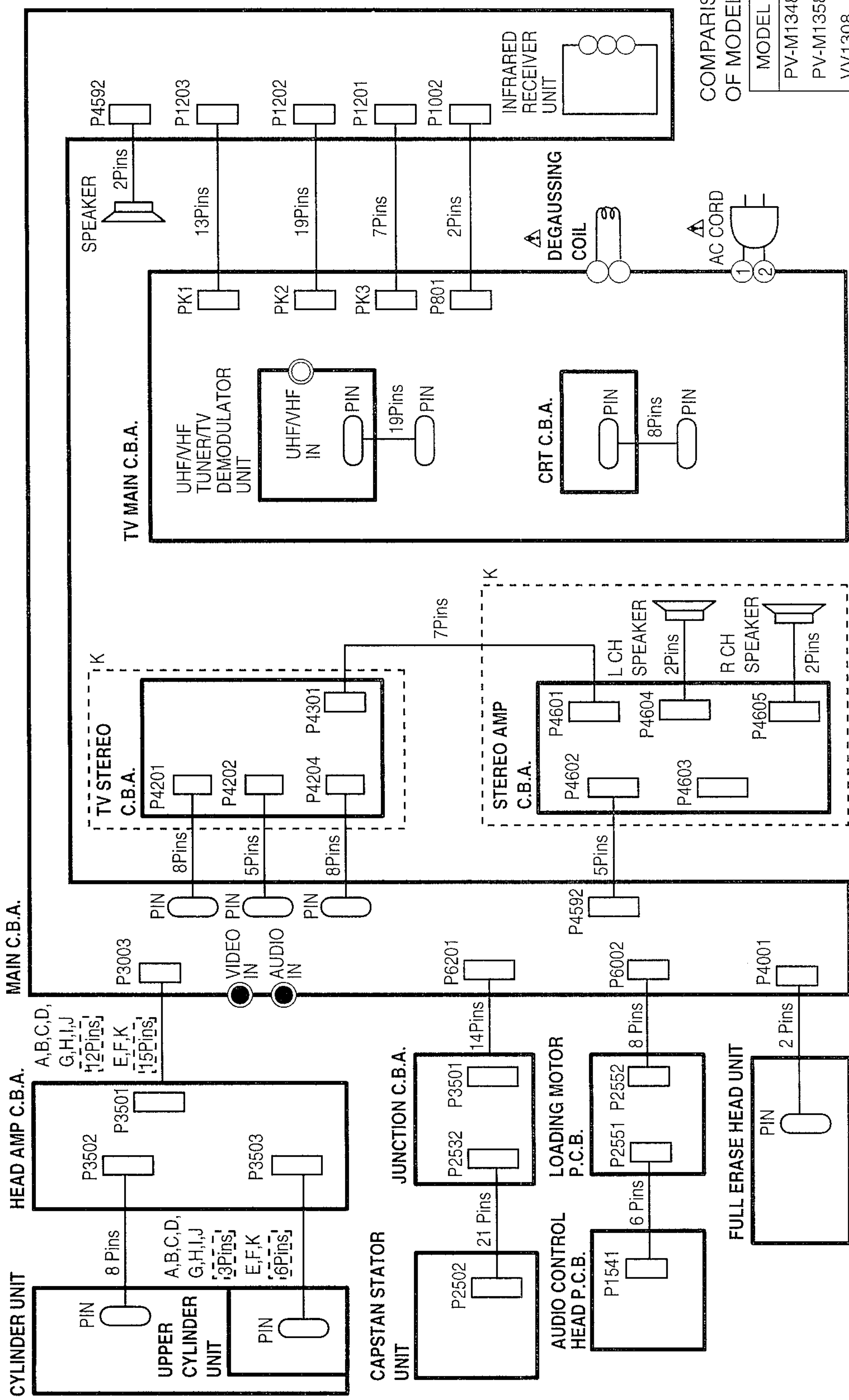
INTERCONNECTION SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART OF MODELS & MARKS

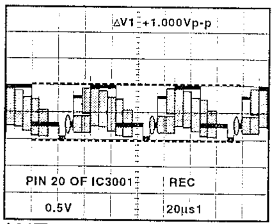
MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z



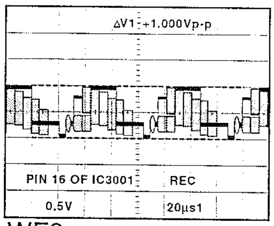
SIGNAL WAVEFORM

MAIN C.B.A.

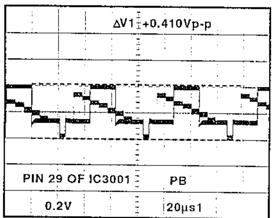
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.



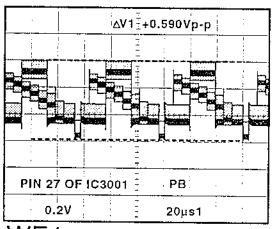
WF1



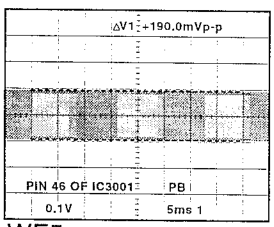
WF2



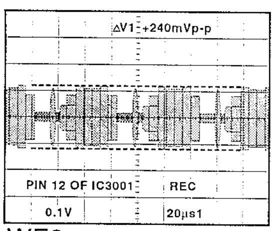
WF3



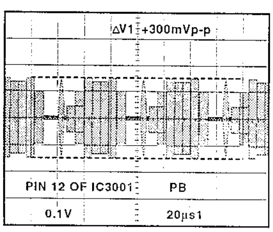
WF4



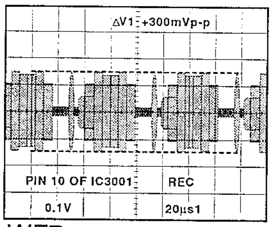
WF5



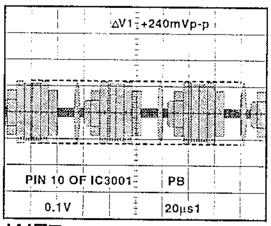
WF6



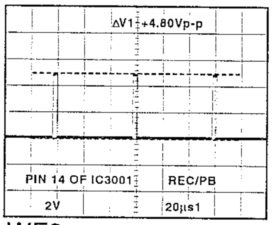
WF6



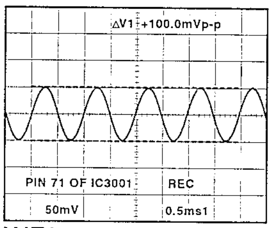
WF7



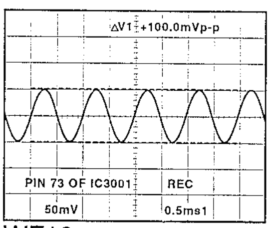
WF7



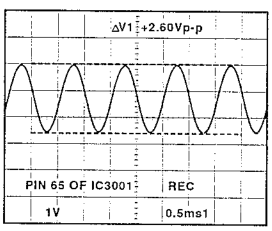
WF8



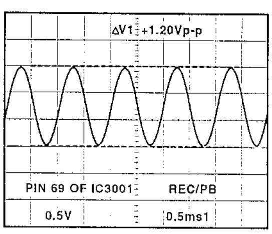
WF9



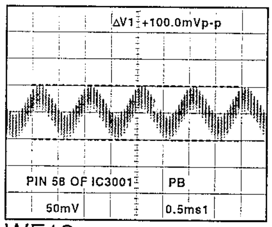
WF10



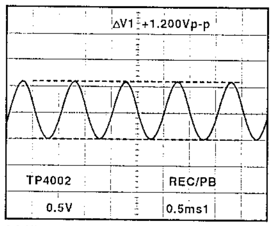
WF11



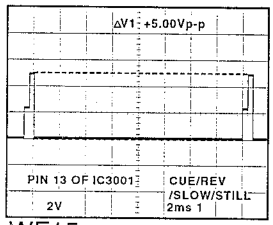
WF12



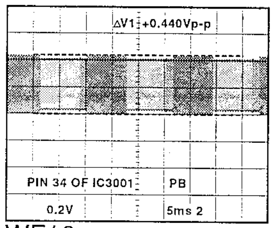
WF13



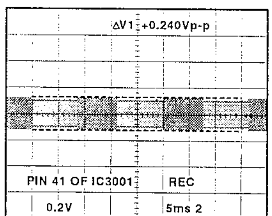
WF14



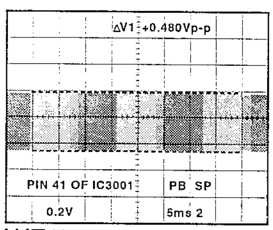
WF15



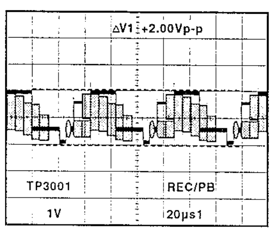
WF16



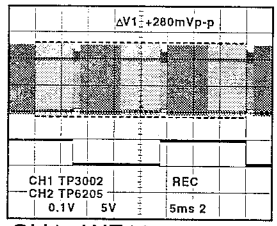
WF17



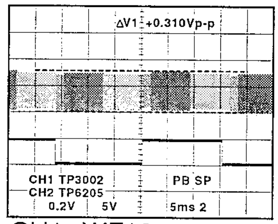
WF17



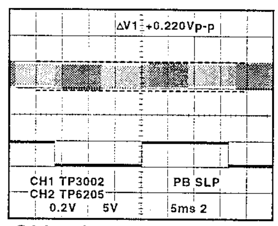
WF18



CH1 WF19
CH2 WF34
(A B C D G H,I,J)



CH1 WF19
CH2 WF34
(A B C,D,G,H,I,J)

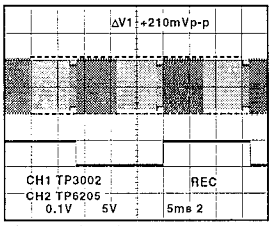


CH1 WF19
CH2 WF34
(A,B C D G,H,I,J)

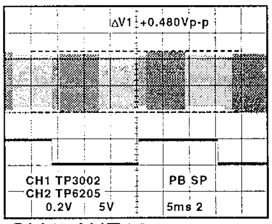
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

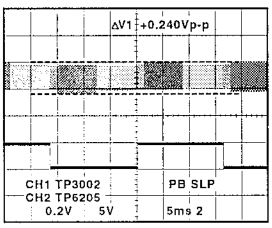
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.



CH1 WF19
CH2 WF34
(E,F,K)



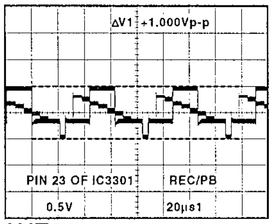
CH1 WF19
CH2 WF34
(E F K)



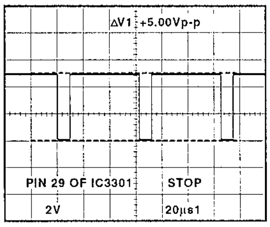
CH1 WF19
CH2 WF34
(E F K)

COMPARISON CHART OF MODELS & MARKS

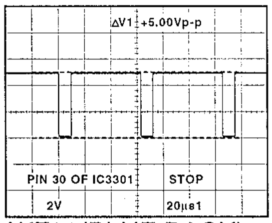
MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z



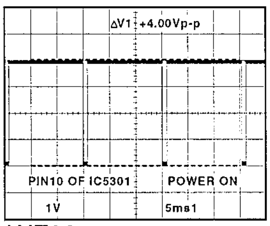
WF20



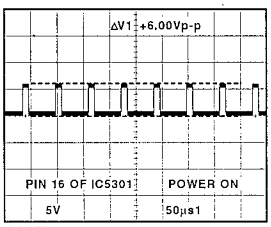
WF21(BLUE BACK)



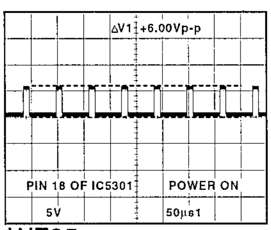
WF22(BLUE BACK)



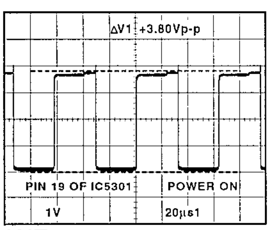
WF23



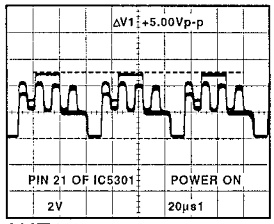
WF24



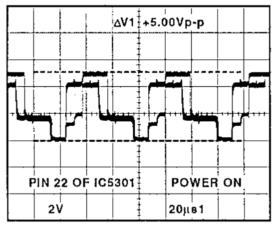
WF25



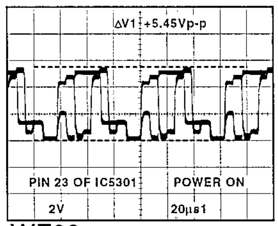
WF26



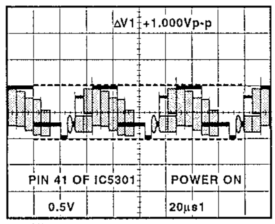
WF27



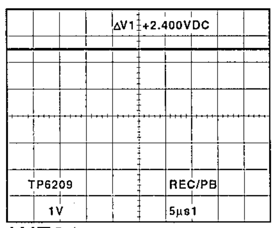
WF28



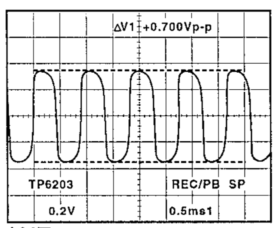
WF29



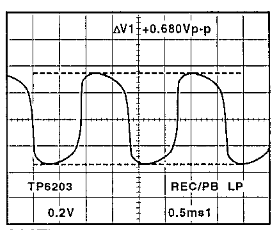
WF30



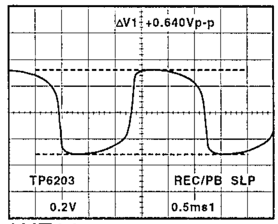
WF31



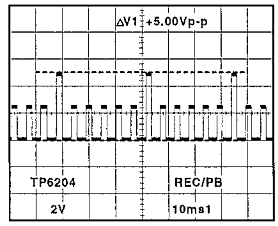
WF32



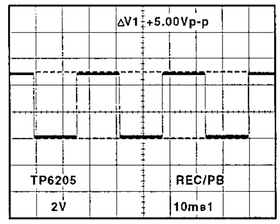
WF32



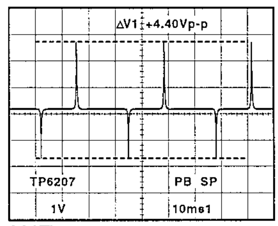
WF32



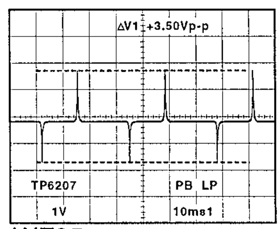
WF33



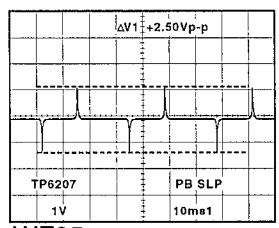
WF34



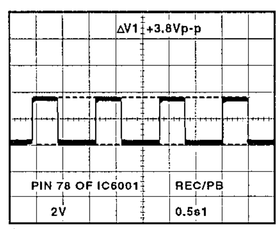
WF35



WF35

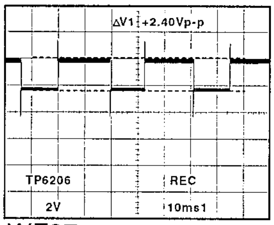


WF35

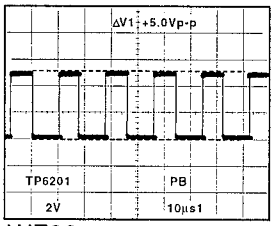


WF36

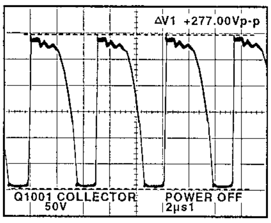
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.



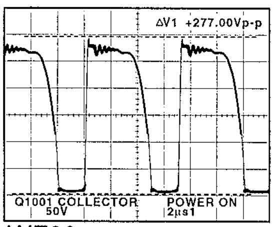
WF37



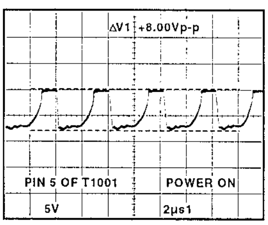
WF38



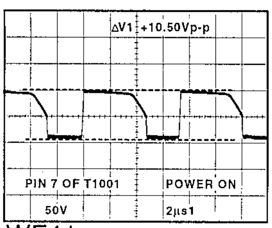
WF39



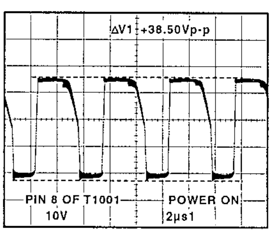
WF39



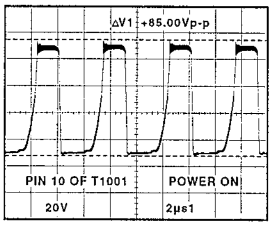
WF40



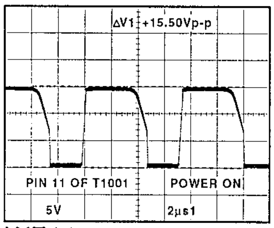
WF41



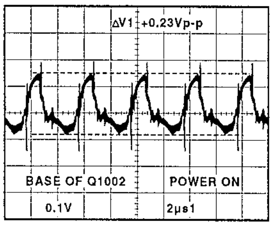
WF42



WF43

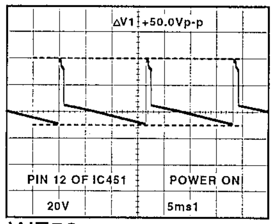


WF44

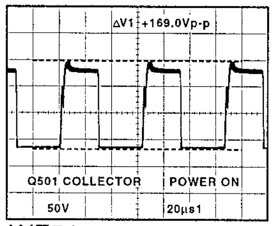


WF45

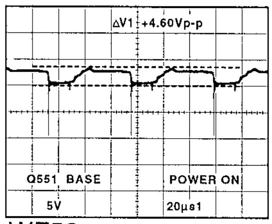
TV MAIN C.B.A.



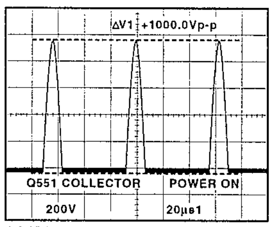
WF50



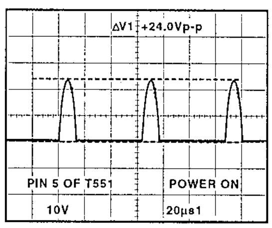
WF51



WF52

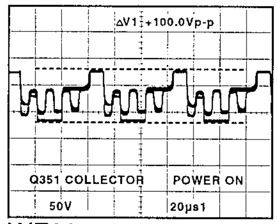


WF53

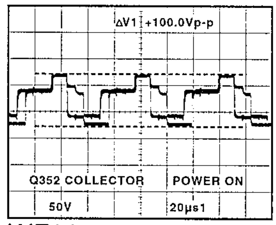


WF54

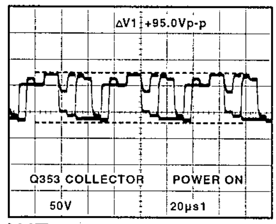
CRT C.B.A.



WF60

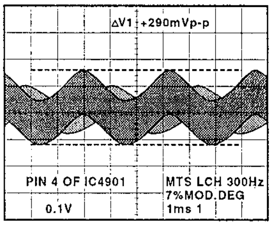


WF61

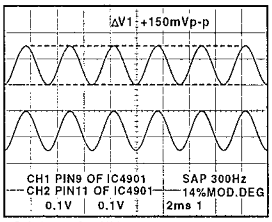


WF62

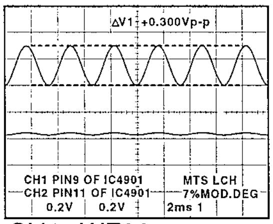
TV STEREO C.B.A. (K)



WF65

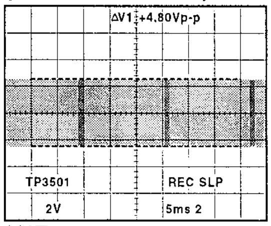


CH1 WF66
CH2 WF67



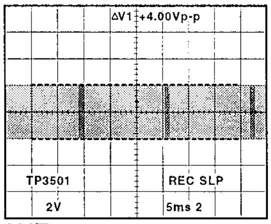
CH1 WF66
CH2 WF67

HEAD AMP C.B.A. (A,B,C,D,G,H,I,J)



WF70

HEAD AMP C.B.A. (E,F,K)



WF75

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

VOLTAGE CHART

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

MAIN CIRCUIT

MODE / PIN NO.	REC	PLAY
IC1001		
1	5.1	5.1
2	4.4	4.4
3	-54.0	-54.0
4	-53.8	-53.8
IC3001		
1	5.1	5.1
2	3.4	3.4
3	2.1	2.1
4	5.1	5.1
5	4.3	4.3
6	---	---
7	5.2	5.2
8	5.2	5.2
9	2.2	2.2
10	2.8	2.8
11	0.8	0.8
12	2.8	2.8
13	0.4	0.4
14	0.5	0.5
15	0	0.9
16	3.1	3.8
17	2.4	1.8
18	3.1	5.7
19	2.6	2.6
20	3.1	4.0
21	5.1	5.1
22	0	2.0
23	2.6	2.4
24	2.6	2.4
25	2.0	2.0
26	2.6	2.5
27	2.0	2.0
28	0	0
29	1.9	1.8
30	1.9	1.6
31	2.0	1.2
32	2.4	2.4
33	2.7	2.7
34	3.0	2.8
35	2.6	2.6
36	2.5	2.5
37	0	1.5
38	4.4	2.3
39	0	1.5
40	3.8	2.4
41	0	0
42	0	0
43	3.4	3.3
44	2.6	2.6
45	2.6	2.6
46	2.6	2.6
47	5.1	5.1
48	1.3	1.3
49	2.7	2.7
50	3.8	3.1
51	5.1	5.1
52	2.5	2.5
53	2.5	2.5

MODE / PIN NO.	REC	PLAY
54	4.1	0.1
55	0	0
56	0.1	4.4
57	0	2.6
58	2.6	2.6
59	2.6	2.6
60	2.6	2.6
61	2.6	2.6
62	0	0
63	0	0
64	1.6	1.8
65	2.6	2.6
66	0	2.6
67	2.6	0
68	5.2	0
69	2.6	2.6
70	0.3	0
71	2.6	2.6
72	2.6	0
73	2.6	2.6
74	0	0
75	0	0
76	3.3	0
77	0	0
78	2.1	0
79	3.0	0
80	0	2.0
81	---	---
82	---	---
83	2.6	0
84	2.5	0
IC3201		
1	3.4	3.4
2	-2.5	-2.5
3	0	0
4	2.5	2.5
5	2.5	2.5
6	-2.7	-2.7
7	2.1	2.1
8	3.0	3.0
IC3301		
1	4.2	4.2
2	4.7	4.7
3	5.0	5.0
4	---	---
5	5.1	5.1
6	0	0
7	---	---
8	5.1	5.1
9	0	0
10	2.6	2.6
11	2.4	2.4
12	5.1	5.1
13	0.6	0.6
14	0.6	0.6
15	0.6	0.6
16	0.6	0.6
17	5.1	5.1
18	2.4	2.4

MODE / PIN NO.	REC	PLAY
19	2.4	2.4
20	2.6	2.6
21	5.1	5.1
22	0	0
23	2.8	2.8
24	5.0	5.0
25	4.1	4.1
26	---	---
27	0	0
28	0	0
29	0	0
30	0	0
31	---	---
32	---	---
33	---	---
34	---	---
35	---	---
36	2.0	2.0
37	---	---
38	---	---
39	---	---
40	---	---
41	3.9	3.9
42	4.6	4.6
43	4.6	4.6
44	4.6	4.6
45	---	---
46	0	0
47	---	---
48	---	---
49	5.1	5.1
50	5.1	5.1
51	5.1	5.1
52	0.2	5.1
IC4151		
1	11.4	11.4
2	4.7	4.7
3	---	---
4	2.7	2.7
5	6.0	6.0
6	6.2	6.2
7	0	0
8	6.3	6.3
9	16.6	16.6
IC5301		
1	2.7	2.7
2	2.5	2.5
3	3.4	3.4
4	3.1	3.1
5	2.1	2.1
6	2.1	2.1
7	6.2	6.2
8	0	0
9	0	0
10	3.8	3.8
11	4.9	4.9
12	2.8	2.8
13	4.2	4.2
14	6.4	6.4

MODE / PIN NO.	REC	PLAY
15	4.3	4.3
16	0.6	0.6
17	0	0
18	0.6	0.6
19	2.2	2.2
20	0	0
21	3.7	3.7
22	3.7	3.7
23	3.7	3.7
24	6.0	6.0
25	2.7	2.7
26	9.2	9.2
27	0	0
28	0	0
29	0	0
30	5.8	5.8
31	3.3	3.3
32	3.7	3.7
33	6.3	6.3
34	0	8.3
35	0	4.9
36	4.3	4.3
37	9.7	9.7
38	0	0
39	2.3	2.3
40	2.1	2.1
41	2.0	2.0
42	0	0
43	4.9	4.9
44	4.9	4.9
45	0.4	0.4
46	2.5	2.5
47	5.1	5.1
48	2.7	2.7
IC6001		
1	0	0
2	0	0
3	0	0
4	0	2.6
5	2.4	2.4
6	0	0
7	0	0
8	0	0
9	2.5	2.5
10	0	2.4
11	0	5.1
12	0	4.0
13	0.1	5.3
14	5.2	0
15	0	0
16	---	---
17	0	0
18	---	---
19	---	---
20	5.2	0
21	0	0
22	---	---
23	2.6	2.6
24	2.6	2.6

MODE / PIN NO.	REC	PLAY
25	4.5	4.5
26	5.2	5.2
27	5.1	5.1
28	5.1	5.1
29	2.6	2.6
30	5.2	5.2
31	0	0
32	5.2	5.2
33	5.3	5.3
34	5.2	5.3
35	0	0
36	0	0
37	0	0
38	5.2	5.3
39	0	0
40	0	0
41	5.2	5.2
42	0	0
43	5.2	5.2
44	---	---
45	4.5	4.5
46	0.3	0.3
47	5.1	5.1
48	5.2	5.2
49	0.1	0
50	5.2	0
51	1.3	1.3
52	5.2	5.2
53	0	0
54	0	0
55	0	0
56	0	0
57	0.4	0.4
58	5.3	5.3
59	5.2	5.2
60	5.3	5.3
61	5.2	5.3
62	0	0
63	5.1	0
64	5.0	0
65	5.2	5.3
66	0	0
67	0	0
68	5.2	5.3
69	5.2	5.3
70	5.2	5.3
71	0	0
72	2.6	2.6
73	5.3	5.3
74	5.3	5.3
75	5.3	5.3
76	5.3	5.3
77	0	0
78	5.1	5.2
79	5.2	5.2
80	5.2	5.2
81	3.8	3.0
82	0	0
83	0	0

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCEMATIC SECTION.

MODE / PIN NO.	REC	PLAY
84	0	2.1
85	3.0	2.6
86	2.1	2.6
87	2.6	2.6
88	2.6	2.6
89	2.6	2.6
90	2.6	2.6
91	0	0
92	5.2	5.2
93	2.6	2.6
94	2.6	2.6
95	2.6	2.6
96	0	0
97	1.2	1.2
98	1.3	1.3
99	5.2	5.2
100	2.1	2.1
IC6002		
1	1.3	1.3
2	0	0
3	1.3	1.3
4	---	---
IC6003		
1	0	0
2	1.3	1.3
3	0	0
4	---	---
IC6004		
1	0	0
2	0	0
3	0	0
4	0	0
5	4.9	4.9
6	5.0	5.0
7	0	0
8	5.1	5.1
Q1001		
E	0	0
C	133.5	133.5
B	0.3	0.3
Q1002		
E	0	0
C	0.3	0.3
B	0.6	0.6
Q1003		
E	-0.6	-0.6
C	4.1	4.1
B	0	0
Q1004		
E	4.4	4.4
C	0.1	0.1
B	4.1	4.1
Q1005		
E	5.1	5.1
C	5.2	5.2
B	4.7	4.7
Q1051		
E	12.0	12.0

MODE / PIN NO.	REC	PLAY
C	13.2	13.2
B	11.6	12.6
Q1052		
E	0	0
C	11.6	12.6
B	0.7	0.7
Q1053		
E	5.3	5.3
C	5.3	5.3
B	6.0	6.0
Q1054		
E	0.1	12.0
C	12.0	12.0
B	11.4	11.4
Q1055		
E	0	0
C	-30.4	-30.4
B	-30.0	-30.2
Q3001		
E	1.6	1.6
C	0	0
B	1.0	1.0
Q3002		
E	2.7	2.7
C	4.6	4.6
B	3.3	3.3
Q3310		
E	0	0
C	4.2	4.2
B	0	0
Q3311		
E	1.7	1.7
C	0	0
B	1.0	1.0
Q3314		
E1	1.5	1.5
C1	5.1	5.1
B1	2.1	2.1
E2	1.5	1.5
C2	1.7	1.7
B2	1.9	1.9
Q3315		
E	1.7	1.7
C	5.0	5.0
B	5.1	5.1
Q4001		
E	5.1	5.1
C	-18.2	5.1
B	5.1	4.4
Q4002		
E	-21.0	0
C	0	0
B	-14.1	0
Q4003		
E	-20.1	0
C	0	0
B	-14.0	0.8
Q4005		
E	-4.3	-4.3

MODE / PIN NO.	REC	PLAY
C	0	0
B	0	0
Q4006		
E	0	0
C	-4.3	-4.3
B	0	0
Q4101		
E	0	0
C	11.3	0.5
B	0.2	0.5
Q4154		
E	0	0
C	2.4	2.4
B	0	0
Q5301		
E	2.7	2.7
C	9.2	9.2
B	3.4	3.4
Q5302		
E	6.3	6.3
C	9.2	9.2
B	6.9	6.9
Q5303		
E	0	0
C	0.1	0.1
B	0.7	0.7
Q5601		
E	4.6	4.6
C	9.2	9.2
B	4.0	4.0
Q5901		
E	9.2	9.2
C	11.9	11.9
B	9.8	9.8
Q6002		
E	12.1	12.1
C	12.1	0.5
B	11.2	12.1
Q6003		
E	1.1	0.4
C	11.2	12.1
B	5.0	0
Q6004		
E	5.3	5.3
C	5.1	5.1
B	4.0	4.0
Q6005		
E	0	0
C	0	0
B	0.8	0.8
Q6006		
E	5.1	5.1
C	5.1	5.1
B	0	0
Q6007		
E	0	0
C	5.1	5.1
B	0	0
Q6009		

MODE / PIN NO.	REC	PLAY
E	0	0
C	5.1	5.1
B	---	---
Q6010		
E	0	0
C	5.1	5.1
B	---	---
TP1001	0	0
TP1051	5.3	5.3
TP1052	36.5	36.5
TP1053	13.5	13.5
TP1054	5.2	5.3
TP1055	5.3	5.3
TP1056	5.2	5.2
TP1058	12.0	12.0
TP3001	2.8	2.8
TP3002	2.7	2.3
TP3003	2.7	2.7
TP3004	4.3	4.3
TP3005	2.6	2.6
TP3006	2.5	2.5
TP3007	2.1	2.1
TP3008	3.4	3.4
TP3009	0	0
TP3010	5.1	5.1
TP3011	4.3	4.3
TP3012	2.9	3.4
TP3301	3.2	3.2
TP3302	3.0	0
TP4001	0	0
TP4002	0	0
TP4003	0	0
TP4004	0	0
TP4101	0	0
TP4102	0	0
TP4150	0	0
TP4151	0	0
TP4153	0	0
TP5301	0	0
TP5302	0	0
TP5303	2.7	2.7
TP5305	2.7	2.7
TP5306	0	0
TP5307	---	---
TP5308	5.2	5.2
TP5309	3.4	2.3
TP5401	3.8	3.8
TP5501	0.6	0.6
TP5502	0.6	0.6
TP5503	0	0
TP5504	0	0
TP6001	---	---
TP6002	---	---
TP6003	3.4	3.0
TP6004	5.1	5.1
TP6005	5.1	5.1
TP6007	0	0
TP6008	0	0

MODE / PIN NO.	REC	PLAY
TP6009	5.2	5.2
TP6013	2.5	2.5
TP6014	0	0
TP6201	2.6	2.6
TP6202	2.2	2.2
TP6203	2.6	2.6
TP6204	1.2	1.2
TP6205	2.6	2.6
TP6206	3.0	0
TP6207	2.6	2.6
TP6208	2.5	2.5
TP6209	2.4	2.4
TP6210	0	2.1
TP6211	2.5	2.5

CAPSTAN STATOR CIRCUIT

MODE / PIN NO.	REC	PLAY
IC2501		
1	13.0	13.0
2	13.0	13.0
3	13.5	13.5
4	1.2	1.2
5	1.2	1.2
6	1.2	1.2
7	0.1	2.7
8	0	0
9	2.6	2.6
10	1.5	1.5
11	2.6	2.6
12	0.5	0.5
13	3.9	3.9
14	3.9	3.9
15	0	0
16	0	0
17	---	---
18	13.5	13.5
19	2.8	2.8
20	0	0.7
21	2.8	2.8
22	0	0.7
23	0.2	1.4
24	0	0
25	0	0
26	13.5	13.5
27	---	---
28	5.1	5.1

TV MAIN CIRCUIT

MODE / PIN NO.	REC	PLAY
IC451		
1	10.4	10.4
2	3.8	3.8
3	5.1	5.1
4	0	0
5	0	0
6	0	0
7	5.1	5.1
8	24.5	24.5
9	1.9	1.9
10	1.3	1.3
11	0	0
12	11.8	11.8
13	24.9	24.9
IC801		
1	0	0
2	125.9	125.9
3	131.0	131.0
4	125.2	125.2
5	0	0
Q431		
E	0	0
C	0	0
B	2.1	2.1
Q501		
E	0	0
C	71.8	71.8
B	0	0
Q505		
E	12.1	12.1
C	0	0
B	12.0	12.0
Q506		
E	2.9	2.9
C	0	0
B	2.9	2.9
Q507		
E	0	0
C	2.9	2.9
B	0	0
Q541		
E	16.7	16.7
C	0	0
B	14.3	14.3
Q551		
E	0	0
C	920.0	920.0
B	0	0
Q571		
E	1.4	1.4
C	12.0	12.0
B	0	0
Q801		
E	0.1	0.1
C	0.3	0.3
B	0	0
Q7001		
E	2.6	2.6

MODE / PIN NO.	REC	PLAY
C	3.0	3.0
B	3.3	3.3
TP51	0	0
TP52	0	0
TP891	125.2	125.2
TP892	131.0	131.0
TP893	0	0
TPA8	24.5	24.5
TPA9	17.3	17.3
TPD1	-30.5	-30.5
TPD2	-31.7	-31.7
TPD6	192.0	192.0

CRT CIRCUIT

MODE / PIN NO.	REC	PLAY
Q351		
E	3.7	3.7
C	137.0	137.0
B	4.0	4.0
Q352		
E	3.5	3.5
C	143.0	143.0
B	3.8	3.8
Q353		
E	3.7	3.7
C	138.5	138.5
B	4.0	4.0
TP47E	0	0
TP48	4.0	4.0
TP49	4.0	4.0
TP50	139.0	139.0

STEREO AMP CIRCUIT (K)

MODE / PIN NO.	REC	PLAY
IC4601		
1	9.8	9.8
2	2.6	2.6
3	---	---
4	2.5	2.5
5	6.8	6.8
6	6.9	6.9
7	0	0
8	7.1	7.1
9	16.1	16.1
IC4602		
1	9.8	9.8
2	2.6	2.6
3	---	---
4	2.5	2.5
5	6.8	6.8
6	6.9	6.9
7	0	0
8	7.1	7.1
9	16.1	16.1
Q4601		
E	0	0
C	0	0
B	0	0
Q4602		
E	0	0
C	0	0
B	0	0
TP4601	0	0
TP4602	0	0
TP4603	0	0
TP4604	6.2	6.2
TP4605	6.2	6.2

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

TV STEREO CIRCUIT (K)

MODE / PIN NO.	REC	PLAY
IC4901		
1	0	0
2	0	0
3	0	0
4	0	0
5	12.1	12.1
6	5.1	5.1
7	5.1	5.1
8	5.1	5.1
9	4.5	4.5
10	0	0
11	4.5	4.5
12	---	---
IC9201		
1	3.1	3.1
2	3.7	3.7
3	5.1	5.1
4	4.2	4.2
5	0	0
6	5.1	5.1
7	4.5	4.5
8	2.8	2.8
9	2.8	2.8
IC9301		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	-5.7	-5.7
8	0	0
9	4.3	4.3
10	0	0
11	4.3	4.3
12	0	0
13	0.2	0.2
14	0.2	0.2
15	---	---
16	5.1	5.1
IC9302		
1	0	0
2	0	0
3	0	0
4	-5.7	-5.7
5	0	0
6	0	0
7	0	0
8	5.1	5.1
Q4301		
E	12.1	12.1
C	-5.2	-5.2
B	11.7	11.7
Q9301		
E	4.9	4.9
C	11.6	11.6
B	5.6	5.6
Q9302		
E	4.9	4.9

MODE / PIN NO.	REC	PLAY
C	11.6	11.6
B	5.5	5.5
TP4201	0	0
TP4202	0	0
TP4903	0	0
TP9201	5.1	5.1

HEAD AMP CIRCUIT (A,B,C,D,G,H,I,J)

MODE / PIN NO.	REC	PLAY
IC2601		
1	13.0	13.0
2	13.0	13.0
3	13.5	13.5
4	1.2	1.2
5	5.1	5.1
6	0.9	0.9
7	1.0	1.0
8	0.7	0.7
9	2.6	2.6
10	1.5	1.5
11	0	0
12	3.9	3.9
13	3.9	3.9
14	3.9	3.9
15	0.1	0.1
16	13.2	13.2
IC3501		
1	2.6	2.6
2	0	4.2
3	0.3	1.4
4	0	0.7
5	0	0
6	0	0.7
7	0.2	1.4
8	0	0
9	0	0
10	0.2	0.2
11	0	0
12	0	0
13	---	---
14	0.2	0.2
15	---	---
16	6.3	0
17	6.3	0
18	6.3	0
19	---	---
20	---	---
21	---	---
22	0	0
23	0	0
24	0	0
25	11.9	0.5
26	0	0
27	0	0
28	0	0
29	0	0
30	2.7	2.3
31	5.1	0.1
32	0	0
33	0	0
34	0	0
35	12.0	12.0
36	0.1	5.0
TP3501	0	0

HEAD AMP CIRCUIT (E,F,K)

MODE / PIN NO.	REC	PLAY
IC2601		
1	13.0	13.0
2	13.0	13.0
3	13.5	13.5
4	1.2	1.2
5	5.1	5.1
6	0.9	0.9
7	1.0	1.0
8	0.7	0.7
9	2.6	2.6
10	1.5	1.5
11	0	0
12	3.9	3.9
13	3.9	3.9
14	3.9	3.9
15	0.1	0.1
16	13.2	13.2
IC3501		
1	2.6	2.6
2	0	4.2
3	0.3	1.4
4	0	0.7
5	0	0
6	0	0.7
7	0.2	1.4
8	0	0
9	0	0
10	0.2	2.2
11	0	0
12	0	0
13	0	0
14	0.2	2.2
15	---	---
16	6.3	0
17	6.3	0
18	6.3	0
19	---	---
20	---	---
21	---	---
22	---	---
23	---	---
24	---	---
25	11.9	0.5
26	5.0	5.0
27	0	0
28	0	0
29	0	0
30	2.7	2.3
31	5.1	0.1
32	0.1	0.1
33	0	0
34	0.1	0.7
35	12.0	12.0
36	0.1	5.0
TP3501	0	0

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

SYSTEM CONTROL/SERVO

MODE / PIN NO.	STOP	FF	REW
IC2501			
1	13.0	13.0	13.0
2	13.0	13.0	13.0
3	13.5	13.5	13.5
4	1.2	1.2	1.2
5	1.2	1.2	1.2
6	1.2	1.2	1.2
7	0.1	0.1	0.1
8	0	0	0
9	2.6	2.6	2.6
10	1.5	1.5	1.5
11	2.6	2.6	2.6
12	0.5	0.5	0.5
13	3.9	3.9	3.9
14	3.9	3.9	3.9
15	0	0	0
16	0	0	0
17	---	---	---
18	13.5	13.5	13.5
19	2.8	2.8	2.8
20	0	0	0
21	2.8	2.8	2.8
22	0	0	0
23	0.2	0.2	0.2
24	1.8	0	0
25	1.8	0	0
26	13.5	13.5	13.5
27	---	---	---
28	5.1	5.1	5.1
IC2601			
1	13.0	13.0	13.0
2	13.0	13.0	13.0
3	13.5	13.5	13.5
4	1.2	1.2	1.2
5	5.1	5.1	5.1
6	0.9	0.9	0.9
7	1.0	1.0	1.0
8	0.7	0.7	0.7
9	2.6	2.6	2.6
10	1.5	1.5	1.5
11	0	0	0
12	3.9	3.9	3.9
13	3.9	3.9	3.9
14	3.9	3.9	3.9
15	0.1	0.1	0.1
16	13.2	13.2	13.2
IC6001			
1	0	0	0
2	0	0	0
3	0	0	0
4	2.6	2.4	2.4
5	2.6	2.4	2.4
6	0	0	0
7	0	0	0
8	5.0	0	0
9	4.1	2.5	2.5
10	2.6	2.3	2.4
11	5.0	5.1	2.4
12	4.0	3.9	4.1

MODE / PIN NO.	STOP	FF	REW
13	5.2	5.2	5.2
14	5.2	5.2	5.2
15	0	0	0
16	5.1	5.2	0
17	0	0	0
18	---	---	---
19	---	---	---
20	5.2	5.2	5.2
21	0	0	0
22	0	0	0
23	5.2	2.6	2.6
24	5.2	2.6	2.6
25	4.8	4.5	4.5
26	5.2	5.2	5.2
27	0	5.1	5.1
28	5.1	5.1	5.1
29	5.2	2.6	2.6
30	5.2	5.2	5.2
31	0	0	0
32	-0.5	5.2	5.2
33	5.3	5.3	5.3
34	5.2	5.2	5.2
35	0	0	0
36	0	0	0
37	0	0	0
38	0	5.3	5.3
39	5.2	5.2	5.2
40	0	0	0
41	5.2	5.2	5.2
42	0	0	0
43	5.2	5.2	5.2
44	0	0	0
45	4.9	4.4	4.4
46	0.2	5.2	0.1
47	5.6	5.1	5.1
48	5.2	5.2	5.2
49	0	0	0
50	5.2	0	5.2
51	1.3	2.6	2.6
52	5.2	5.2	5.2
53	2.6	0	5.2
54	0	0	0
55	0	0	0
56	0	0	0.1
57	0	0.4	0.4
58	0	5.3	5.3
59	5.2	5.2	5.2
60	0	5.3	5.3
61	5.2	5.2	5.2
62	0	0	0
63	5.1	5.1	5.1
64	4.9	5.0	5.0
65	5.2	5.2	5.3
66	0	0	0
67	0	0	0
68	5.2	5.2	5.2
69	5.2	5.2	5.2
70	5.2	5.2	0
71	0	0	0

MODE / PIN NO.	STOP	FF	REW
72	2.5	2.5	2.5
73	5.3	5.3	5.3
74	5.3	5.3	5.3
75	5.3	5.3	5.3
76	5.3	0	5.3
77	0	0	0
78	5.1	3.2	3.2
79	5.2	5.2	5.2
80	5.2	5.2	5.2
81	3.8	3.8	3.8
82	0	0	0
83	0	0	0
84	2.5	2.3	2.3
85	2.7	2.6	2.6
86	2.7	2.6	2.6
87	2.7	2.6	2.6
88	2.7	2.6	2.6
89	2.7	2.6	2.6
90	2.7	2.6	2.6
91	0	0	0
92	5.3	5.2	5.2
93	2.7	---	---
94	2.7	2.6	2.6
95	2.7	2.6	2.6
96	0	0	0
97	5.2	1.2	1.1
98	5.1	3.1	3.2
99	0.2	2.5	2.5
100	2.1	2.1	2.1
IC6002			
1	1.2	1.2	1.2
2	0	0	0
3	1.2	1.2	1.2
4	---	---	---
IC6003			
1	2.4	2.4	2.4
2	1.2	1.2	1.2
3	0	0	0
4	---	---	---
Q6002			
E	12.5	12.1	12.1
C	0.5	1.0	1.0
B	12.1	12.1	12.1
Q6003			
E	0	0	0
C	12.1	12.1	12.1
B	0	0	0
Q6004			
E	5.3	5.3	5.3
C	0	0	0
B	5.1	5.1	5.1
Q6005			
E	5.1	5.1	5.1
C	5.1	5.1	5.1
B	4.4	4.4	4.4
Q6006			
E	0	0	0
C	0	0	0

MODE / PIN NO.	STOP	FF	REW
B	0.8	0.8	0.8
Q6007			
E	0	0	0
C	5.2	5.2	5.2
B	0	0	0
Q6009			
E	0	0	0
C	5.1	5.1	5.1
B	---	---	---
Q6010			
E	0	0	0
C	5.1	5.1	5.1
B	---	---	---
TP6001	---	---	---
TP6002	---	---	---
TP6003	3.8	3.8	3.8
TP6004	5.1	5.1	5.1
TP6005	5.1	5.1	5.1
TP6007	0	0	0
TP6008	0	0	0
TP6009	5.2	5.2	5.2
TP6014	0	0	0
TP6201	2.6	2.2	2.2
TP6202	4.5	2.4	2.4
TP6203	2.5	2.5	2.5
TP6204	1.0	1.0	1.0
TP6205	2.6	2.6	2.6
TP6206	2.5	2.5	2.5
TP6207	2.5	2.5	2.5
TP6208	4.4	2.6	2.6
TP6209	4.9	0	0
TP6210	2.3	1.9	1.9
TP6211	2.5	2.5	2.5

CIRCUIT BOARD LAYOUT

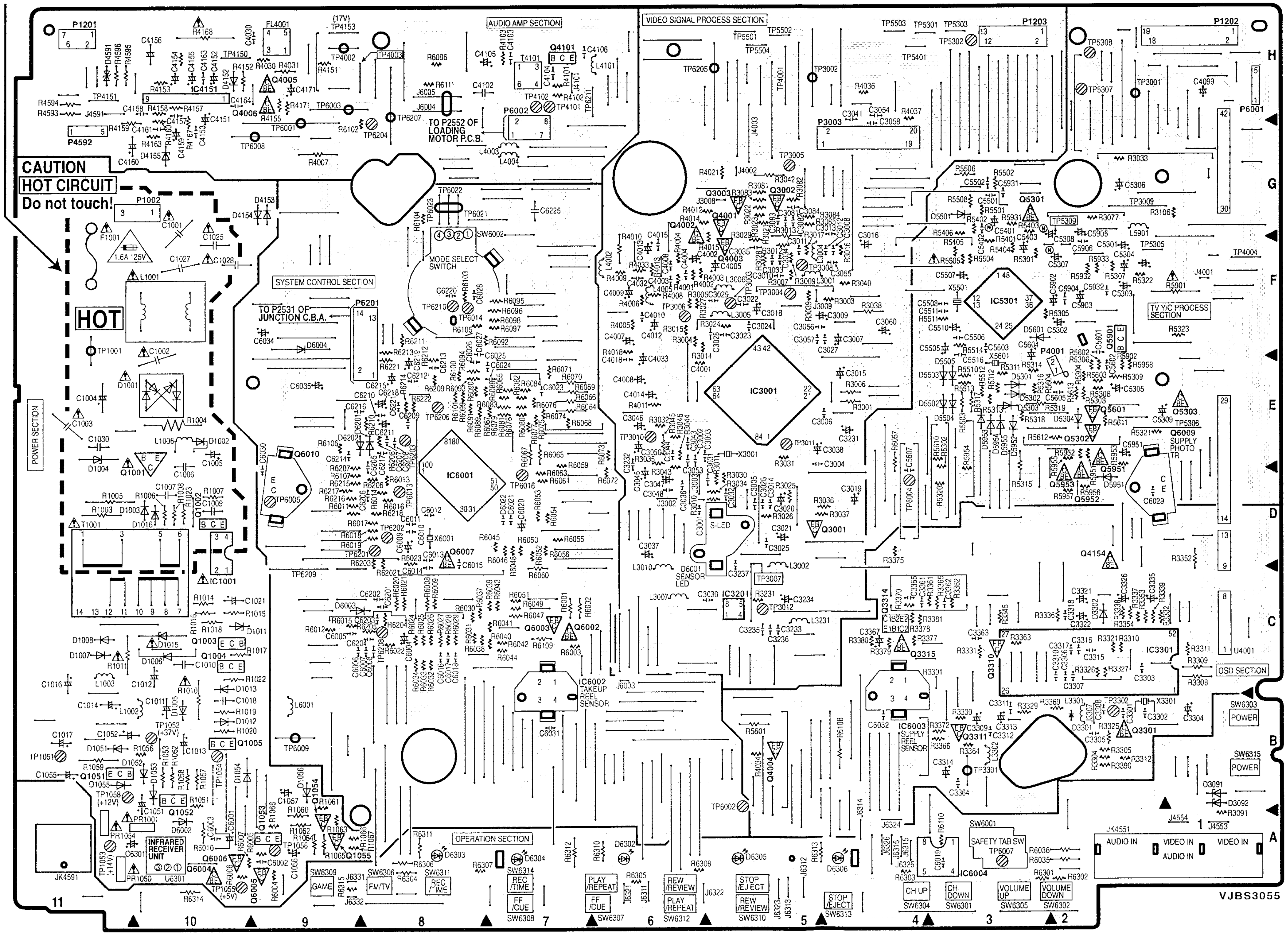
MAIN (POWER SUPPLY/SIGNAL PROCESS/OSD/AUDIO AMP/TV Y/C PROCESS/SYSTEM CONTROL/SERVO/OPERATION) C.B.A. VEPS3055F (A,B) /VEPS3055D (E) /VEPS3055E (F) /VEPS3055G (G) /VEPS3055B (H) /VEPS3055A (K)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS. FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING, PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A. (A,B,E,F,G,H,K)

MAIN	
TRANSISTOR	
Q1001	D-11
Q1002	D-10
Q1003	C-10
Q1004	C-10
Q1005	B-10
Q1051	B-11
Q1052	B-10
Q1053	A-9
Q1054	B-9
Q1055	A-9
Q3001	D-4
Q3002	G-5
Q3003	G-5
Q3301	B-2
Q3310	C-3
Q3311	B-3
Q3314	C-4
Q3315	C-4
Q4001	G-5
Q4002	G-6
Q4003	F-5
Q4004	B-5
Q4005	H-9
Q4006	H-10
Q4101	H-7
Q4154	D-2
Q5301	G-3
Q5302	E-2
Q5303	E-1
Q5601	E-2
Q5901	F-2
Q5951	D-2
Q5952	D-2
Q5953	D-2
Q6002	C-7
Q6003	C-7
Q6004	A-10
Q6005	A-9
Q6006	A-10
Q6007	D-8
Q6009	E-1
Q6010	E-9

MAIN	
IC	
IC1001	C-10
IC3001	E-5
IC3201	C-5
IC3301	C-2
IC4151	H-10
IC5301	F-3
IC6001	D-8
IC6002	C-7
IC6003	B-4
IC6004	A-3

MAIN	
CONNECTOR	
P1002	G-10
P1201	H-11
P1202	H-1
P1203	H-3
P3003	G-4
P4001	F-3
P4592	G-11
P6001	H-1
P6002	G-8
P6201	F-9

MAIN	
TEST POINT	
TP1001	F-11
TP1054	B-10
TP1056	A-9
TP1051	B-11
TP1052	B-10
TP1053	A-11
TP1055	A-10
TP1058	B-11
TP3001	H-2
TP3002	H-5
TP3003	F-5
TP3004	F-5
TP3005	G-5
TP3006	F-6
TP3007	C-5
TP3008	F-5
TP3009	G-2
TP3010	E-6
TP3011	E-5
TP3012	C-5
TP3301	B-3
TP3302	B-2
TP4001	H-5
TP4002	H-9
TP4003	H-8
TP4004	F-1
TP4101	H-7
TP4102	H-7
TP4150	H-10
TP4151	H-11
TP4153	H-9
TP5301	H-4
TP5302	H-3
TP5303	H-3
TP5305	F-2

MAIN	
TEST POINT	
TP5306	E-1
TP5307	H-2
TP5308	H-2
TP5309	G-2
TP5401	H-4
TP5501	H-5
TP5502	H-5
TP5503	H-4
TP5504	H-5
TP6001	G-9
TP6002	B-5
TP6003	H-9
TP6004	D-4
TP6005	D-9
TP6007	A-3
TP6008	G-10
TP6009	B-9
TP6013	D-8
TP6014	F-8
TP6016	D-7
TP6021	G-8
TP6022	G-8
TP6023	G-8
TP6201	D-9
TP6202	D-8
TP6203	E-8
TP6204	G-8
TP6205	H-6
TP6206	E-8
TP6207	G-8
TP6208	C-8
TP6209	D-9
TP6210	F-8
TP6211	H-7

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

LEADLESS COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A. (A,B,E,F,G,H,K)

Q1054	B-9
Q1055	A-9
Q3001	D-4
Q3002	G-5
Q3003	G-5
Q3301	B-2
Q3310	C-3
Q3311	B-3
Q3314	C-4
Q3315	C-4
Q4001	G-5
Q4002	G-6
Q4003	F-5
Q4004	B-5
Q4005	H-9
Q4006	H-10
Q4154	D-2
Q5301	G-3
Q5302	E-2
Q5303	E-1
Q5601	E-2
Q5951	D-2
Q5952	D-2
Q5953	D-2
Q6002	C-7
Q6003	C-2
Q6004	A-10
Q6005	A-9
Q6006	A-10
Q6007	D-8
D3301	B-2
R1051	B-10
R1056	B-10
R1061	B-9
R1063	A-9
R1066	A-9
R1067	A-8
R1068	A-9
R3003	F-4
R3004	F-6
R3005	F-6
R3007	F-5
R3009	F-5
R3010	D-5
R3011	D-5
R3012	F-5
R3014	F-5
R3015	F-6
R3016	F-4
R3017	G-5
R3021	F-5
R3022	G-5
R3023	G-5
R3024	F-5
R3025	D-5
R3026	D-5
R3027	F-5
R3028	F-5
R3029	G-5
R3030	D-5
R3031	E-5
R3032	E-6
R3033	G-2
R3034	D-5
R3035	E-6
R3036	D-4
R3037	D-4
R3039	F-5
R3040	F-4
R3043	D-6
R3044	E-6
R3046	E-6
R3077	G-2
R3081	G-5
R3082	G-5
R3083	G-5
R3084	G-4
R3085	G-4
R3091	A-1
R3106	G-2
R3231	C-5
R3301	C-3
R3304	B-2
R3305	B-2
R3310	C-2
R3311	C-1
R3312	B-2
R3321	C-2
R3325	B-2
R3326	C-2
R3327	C-2
R3329	B-3
R3330	B-3
R3331	C-3
R3332	C-2
R3336	C-3
R3337	C-2
R3338	C-2
R3339	C-2
R3345	C-3
R3353	C-2
R3354	C-2
R3361	C-3
R3362	C-3
R3363	C-3
R3364	B-3
R3365	C-3
R3366	B-3
R3369	B-3
R3370	C-4
R3372	B-3
R3375	D-4
R3377	C-4
R3378	C-4
R3379	C-4
R3380	C-4
R3381	C-3
R3390	B-2
R4001	F-6
R4002	F-5
R4003	F-5
R4004	F-6
R4005	F-6
R4006	F-6
R4008	F-6
R4009	F-6
R4011	E-6
R4012	G-6
R4013	F-6
R4014	G-6
R4015	F-5
R4018	F-6
R4021	G-5
R4030	H-9
R4033	F-6
R4034	B-5
R4036	H-4
R4037	H-4
R4101	H-7
R4102	H-7
R4103	H-7
R4151	H-9
R4153	H-10
R4155	H-9
R4157	H-10
R4158	H-10
R4160	G-10
R4163	G-10
R4167	G-10
R4171	H-9
R5301	E-3
R5302	E-3
R5303	E-2
R5304	E-2
R5305	F-2
R5306	E-2
R5307	F-2
R5308	E-2
R5309	E-2
R5311	E-3
R5312	E-3
R5313	E-3
R5314	E-3
R5316	E-3
R5318	E-2
R5320	D-3
R5321	E-2
R5322	F-2
R5323	F-1
R5401	F-3
R5402	G-3
R5403	G-3
R5404	F-3
R5405	F-3
R5406	G-3
R5501	G-3
R5502	G-3
R5504	F-3
R5505	F-3
R5508	G-3
R5510	E-3
R5511	F-4
R5512	E-3
R5513	E-3
R5514	F-3
R5602	F-2
R5603	E-2
R5604	E-3
R5610	E-3
R5611	F-2
R5612	E-3
R5613	E-2
R5902	E-2
R5931	G-3
R5932	F-2
R5933	F-2
R5951	D-2
R5952	E-2
R5953	E-2
R5954	E-3
R5955	D-2
R5956	D-2
R5957	D-2
R5958	E-2
R6003	C-7
R6004	A-9
R6005	A-9
R6006	A-10
R6007	A-10
R6008	C-8
R6009	C-8
R6011	D-9
R6012	C-9
R6013	D-8
R6014	D-8
R6015	C-9
R6016	D-8
R6017	D-9
R6018	D-9
R6019	D-9
R6020	C-8
R6021	C-8
R6022	C-8
R6023	D-9
R6024	C-8
R6025	C-8
R6026	C-8
R6027	C-8
R6028	C-8
R6029	C-8
R6030	C-8
R6031	C-8
R6032	C-8
R6033	C-8
R6034	C-8
R6037	C-8
R6038	C-8
R6039	C-8
R6040	C-7
R6041	C-7
R6042	C-7
R6043	C-7
R6044	C-7
R6045	D-8
R6046	D-8
R6047	C-7
R6048	C-7
R6049	C-7
R6050	D-7
R6051	C-7
R6052	D-7
R6053	D-7
R6054	D-7
R6055	D-7
R6056	D-7
R6059	E-7
R6061	D-7
R6063	D-7
R6068	E-7
R6071	E-7
R6072	D-6
R6073	E-6
R6074	E-7
R6075	E-7
R6076	E-7
R6077	E-7
R6078	E-7
R6079	E-7
R6080	E-7
R6081	E-7
R6082	E-7
R6083	E-8
R6084	E-7
R6085	E-7
R6086	H-8
R6087	E-8
R6088	E-7
R6089	E-8
R6090	E-8
R6091	E-8
R6092	F-8
R6093	E-8
R6094	E-8
R6095	F-7
R6096	F-7
R6097	F-7
R6098	F-7
R6099	E-8
R6100	E-8
R6101	E-8
R6102	G-9
R6103	F-8
R6104	G-8
R6105	F-8
R6106	E-9
R6107	D-9
R6110	A-3
R6111	H-8
R6202	C-8
R6203	D-9
R6204	C-8
R6205	C-9
R6206	D-8
R6207	E-9
R6208	E-8
R6209	E-8
R6210	E-8
R6211	F-8
R6212	E-8
R6213	F-8
R6214	E-8
R6215	D-9
R6216	D-9
R6217	D-9
R6218	D-8
R6221	E-8
R6222	E-8
R6301	A-3
R6302	A-2
R6303	A-4
R6305	A-6
R6307	A-8
R6308	A-6
C3001	D-5
C3002	E-5
C3003	E-5
C3004	E-4
C3005	D-5
C3006	E-5
C3008	G-4
C3010	F-5
C3011	F-5
C3012	G-4
C3013	G-4
C3014	D-5
C3022	F-5
C3023	F-5
C3024	F-5
C3025	D-5
C3026	D-5
C3027	F-4
C3028	F-5
C3029	F-5
C3030	C-5
C3031	E-4
C3032	D-5
C3033	F-5
C3034	F-5
C3035	F-5
C3036	D-6
C3041	H-4
C3043	E-6
C3044	E-6
C3048	D-6
C3053	E-6
C3054	H-4
C3055	F-4
C3056	F-5
C3057	F-5
C3058	G-4
C3081	G-5
C3082	G-5
C3083	G-5
C3084	G-5
C3232	E-6
C3233	C-5
C3235	C-5
C3236	C-5
C3237	C-5
C3301	B-2
C3302	B-2
C3303	C-2
C3305	B-2
C3306	C-2
C3307	C-2
C3310	C-2
C3311	B-3
C3312	B-3
C3315	C-2
C3316	C-2
C3317	C-2
C3318	C-2
C3361	C-4
C3362	C-3
C3363	C-3
C3364	B-3
C3365	C-4
C4001	E-6
C4003	F-6
C4004	F-6
C4008	F-6
C4010	F-6
C4015	G-6
C4018	E-6
C4030	H-10
C4032	F-6
C4103	H-7
C4104	H-7
C4106	H-7
C4153	G-10
C4157	H-10
C4158	H-11
C4161	G-10
C4163	H-10
C4164	H-10
C5392	F-2
C5402	F-3
C5501	G-3
C5502	G-3
C5506	F-3
C5508	F-4
C5511	F-4
C5516	E-3
C5601	F-2
C5602	E-2
C5603	F-3
C5605	E-3
C5607	E-4
C5904	F-2
C5906	F-2
C5931	G-3
C6002	A-9
C6003	A-10
C6005	C-9
C6006	C-9
C6007	C-9
C6008	C-8
C6010	D-8
C6011	D-8
C6012	D-8
C6013	D-8
C6014	C-8
C6015	D-8
C6016	C-8
C6017	C-8
C6018	C-8
C6019	A-3
C6021	D-7
C6022	D-7
C6024	E-7
C6025	F-8
C6026	E-8
C6027	F-8
C6028	F-8
C6029	D-2
C6030	E-9
C6031	B-7
C6032	B-4
C6201	C-8
C6202	C-9
C6203	C-9
C6204	C-9
C6205	D-8
C6206	D-9
C6207	E-8
C6208	E-8
C6209	E-8
C6210	E-9
C6212	E-8
C6213	E-8
C6214	E-9
C6216	E-9
C6217	D-8
C6220	F-8
C6221	E-8

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

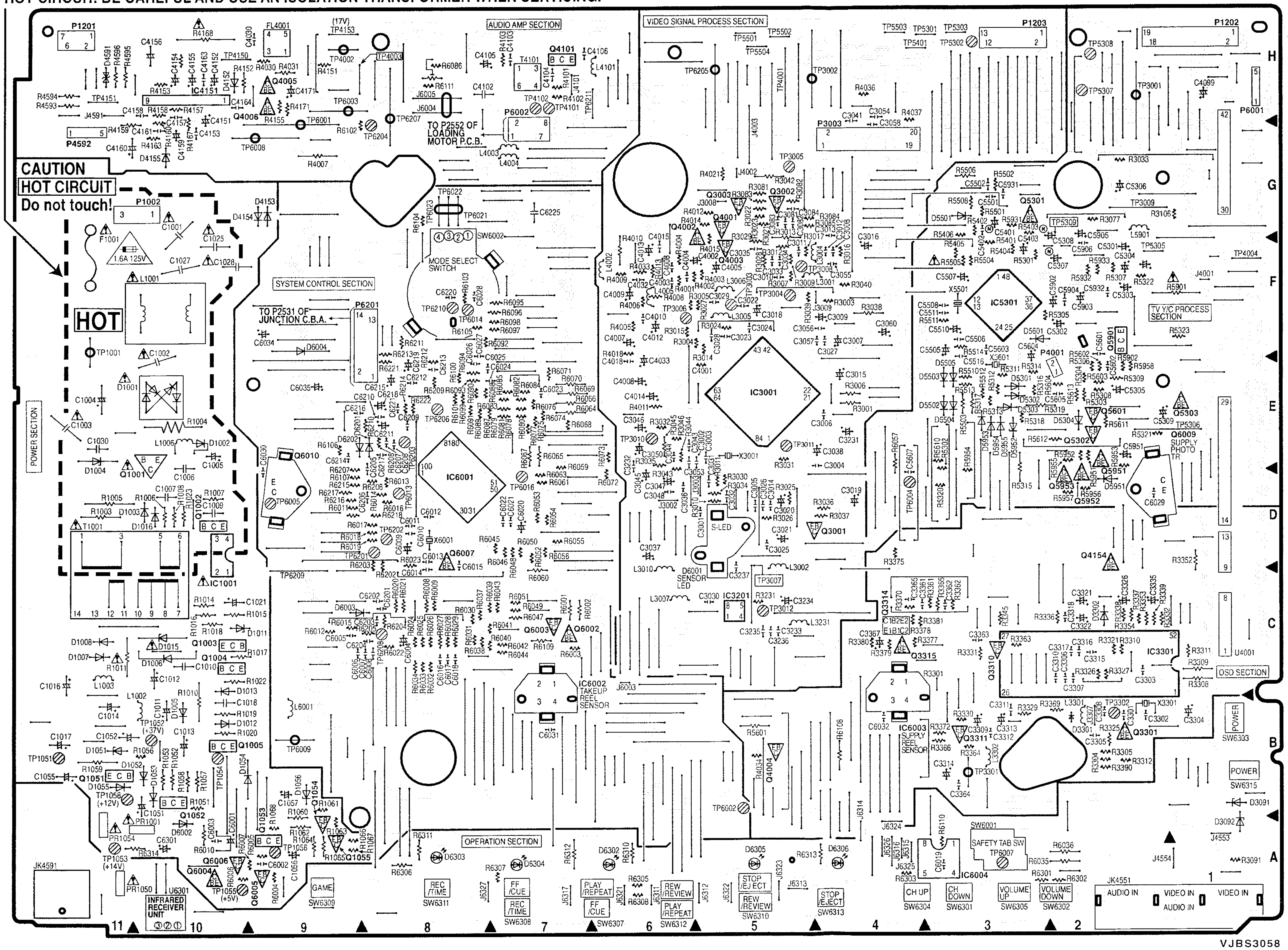
MAIN (POWER SUPPLY/SIGNAL PROCESS/OSD/AUDIO AMP/TV Y/C PROCESS/SYSTEM CONTROL/SERVO/OPERATION) C.B.A. VEPS3058B (C,D) /VEPS3058A (I,J)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS. FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING, PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A. (C,D,I,J)

MAIN	
TRANSISTOR	
Q1001	D-11
Q1002	D-10
Q1003	C-10
Q1004	C-10
Q1005	B-10
Q1051	B-11
Q1052	B-10
Q1053	A-9
Q1054	B-9
Q1055	A-9
Q3001	D-4
Q3002	G-5
Q3003	G-5
Q3301	B-2
Q3310	C-3
Q3311	B-3
Q3314	C-4
Q3315	C-4
Q4001	G-5
Q4002	G-6
Q4003	F-5
Q4004	B-5
Q4005	H-9
Q4006	H-10
Q4101	H-7
Q4154	D-2
Q5301	G-3
Q5302	E-2
Q5303	E-1
Q5601	E-2
Q5901	F-2
Q5951	D-2
Q5952	D-2
Q5953	D-2
Q6002	C-7
Q6003	C-7
Q6004	A-10
Q6005	A-9
Q6006	A-10
Q6007	D-8
Q6009	E-1
Q6010	E-9

MAIN	
IC	
IC1001	C-10
IC3001	E-5
IC3201	C-5
IC3301	C-2
IC4151	H-10
IC5301	F-3
IC6001	D-8
IC6002	C-7
IC6003	B-4
IC6004	A-3

MAIN	
CONNECTOR	
P1002	G-10
P1201	H-11
P1202	H-1
P1203	H-3
P3003	G-4
P4001	F-3
P4592	G-11
P6001	H-1
P6002	G-8
P6201	F-9

MAIN	
TEST POINT	
TP1001	F-11
TP1054	B-10
TP1056	A-9
TP1051	B-11
TP1052	B-10
TP1053	A-11
TP1055	A-10
TP1058	B-11
TP3001	H-2
TP3002	H-5
TP3003	F-5
TP3004	F-5
TP3005	G-5
TP3006	F-6
TP3007	C-5
TP3008	F-5
TP3009	G-2
TP3010	E-6
TP3011	E-5
TP3012	C-5
TP3301	B-3
TP3302	B-2
TP4001	H-5
TP4002	H-9
TP4003	H-8
TP4004	F-1
TP4101	H-7
TP4102	H-7
TP4150	H-10
TP4151	H-11
TP4153	H-9
TP5301	H-4
TP5302	H-3
TP5303	H-3
TP5305	F-2

MAIN	
TEST POINT	
TP5306	E-1
TP5307	H-2
TP5308	H-2
TP5309	G-2
TP5401	H-4
TP5501	H-5
TP5502	H-5
TP5503	H-4
TP5504	H-5
TP6001	G-9
TP6002	B-5
TP6003	H-9
TP6004	D-4
TP6005	D-9
TP6007	A-3
TP6008	G-10
TP6009	B-9
TP6013	D-8
TP6014	F-8
TP6016	D-7
TP6021	G-8
TP6022	G-8
TP6023	G-8
TP6201	D-9
TP6202	D-8
TP6203	E-8
TP6204	G-8
TP6205	H-6
TP6206	E-8
TP6207	G-8
TP6208	C-8
TP6209	D-9
TP6210	F-8
TP6211	H-7

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCEMATIC SECTION.

LEADLESS COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A. (C,D,I,J)

Q1054	B-9	R3039	F-5	R4033	F-6	R5956	D-2	R6080	E-7	C3022	F-5	C4161	G-10
Q1055	A-9	R3040	F-4	R4034	B-5	R5957	D-2	R6081	E-7	C3023	F-5	C4163	H-10
Q3001	D-4	R3043	D-6	R4036	H-4	R5958	E-2	R6082	E-7	C3024	F-5	C4164	H-10
Q3002	G-5	R3044	E-6	R4037	H-4	R6003	C-7	R6083	E-8	C3025	D-5	C5392	F-2
Q3003	G-5	R3046	E-6	R4101	H-7	R6004	A-9	R6084	E-7	C3026	D-5	C5402	F-3
Q3301	B-2	R3077	G-2	R4102	H-7	R6005	A-9	R6085	E-7	C3027	F-4	C5501	G-3
Q3310	C-3	R3081	G-5	R4103	H-7	R6006	A-10	R6086	H-8	C3028	F-5	C5502	G-3
Q3311	B-3	R3082	G-5	R4151	H-9	R6007	A-10	R6087	E-8	C3029	F-5	C5506	F-3
Q3314	C-4	R3083	G-5	R4153	H-10	R6008	C-8	R6088	E-7	C3030	C-5	C5508	F-4
Q3315	C-4	R3084	G-4	R4155	H-9	R6009	C-8	R6089	E-8	C3031	E-4	C5511	F-4
Q4001	G-5	R3085	G-4	R4157	H-10	R6011	D-9	R6090	E-8	C3032	D-5	C5516	E-3
Q4002	G-6	R3091	A-1	R4158	H-10	R6012	C-9	R6091	E-8	C3033	F-5	C5601	F-2
Q4003	F-5	R3106	G-2	R4160	G-10	R6013	D-8	R6092	F-8	C3034	F-5	C5602	E-2
Q4004	B-5	R3231	C-5	R4163	G-10	R6014	D-8	R6093	E-8	C3035	F-5	C5603	F-3
Q4005	H-9	R3301	C-3	R4167	G-10	R6015	C-9	R6094	E-8	C3036	D-6	C5605	E-3
Q4006	H-10	R3304	B-2	R4171	H-9	R6016	D-8	R6095	F-7	C3041	H-4	C5607	E-4
Q4154	D-2	R3305	B-2	R5301	E-3	R6017	D-9	R6096	F-7	C3043	E-6	C5904	F-2
Q5301	G-3	R3310	C-2	R5302	E-3	R6018	D-9	R6097	F-7	C3044	E-6	C5906	F-2
Q5302	E-2	R3311	C-1	R5303	E-2	R6019	D-9	R6098	F-7	C3048	D-6	C5931	G-3
Q5303	E-1	R3312	B-2	R5304	E-2	R6020	C-8	R6099	E-8	C3053	E-6	C6002	A-9
Q5601	E-2	R3321	C-2	R5305	F-2	R6021	C-8	R6100	E-8	C3054	H-4	C6003	A-10
Q5951	D-2	R3325	B-2	R5306	E-2	R6022	C-8	R6101	E-8	C3055	F-4	C6005	C-9
Q5952	D-2	R3326	C-2	R5307	F-2	R6023	D-9	R6102	G-9	C3056	F-5	C6006	C-9
Q5953	D-2	R3327	C-2	R5308	E-2	R6024	C-8	R6103	F-8	C3057	F-5	C6007	C-9
Q6002	C-7	R3329	B-3	R5309	E-2	R6025	C-8	R6104	G-8	C3058	G-4	C6008	C-8
Q6003	C-2	R3330	B-3	R5311	E-3	R6026	C-8	R6105	F-8	C3081	G-5	C6010	D-8
Q6004	A-10	R3331	C-3	R5312	E-3	R6027	C-8	R6106	E-9	C3082	G-5	C6011	D-8
Q6005	A-9	R3332	C-2	R5313	E-3	R6028	C-8	R6107	D-9	C3083	G-5	C6012	D-8
Q6006	A-10	R3336	C-3	R5314	E-3	R6029	C-8	R6110	A-3	C3084	G-5	C6013	D-8
Q6007	D-8	R3337	C-2	R5316	E-3	R6030	C-8	R6111	H-8	C3232	E-6	C6014	C-8
D3301	B-2	R3338	C-2	R5318	E-2	R6031	C-8	R6202	C-8	C3233	C-5	C6015	D-8
R1051	B-10	R3339	C-2	R5320	D-3	R6032	C-8	R6203	D-9	C3235	C-5	C6016	C-8
R1056	B-10	R3345	C-3	R5321	E-2	R6033	C-8	R6204	C-8	C3236	C-5	C6017	C-8
R1061	B-9	R3353	C-2	R5322	F-2	R6034	C-8	R6205	C-9	C3237	C-5	C6018	C-8
R1063	A-9	R3354	C-2	R5323	F-1	R6037	C-8	R6206	D-8	C3301	B-2	C6019	A-3
R1066	A-9	R3361	C-3	R5401	F-3	R6038	C-8	R6207	E-9	C3302	B-2	C6021	D-7
R1067	A-8	R3362	C-3	R5402	G-3	R6039	C-8	R6208	E-8	C3303	C-2	C6022	D-7
R1068	A-9	R3363	C-3	R5403	G-3	R6040	C-7	R6209	E-8	C3305	B-2	C6024	E-7
R3003	F-4	R3364	B-3	R5404	F-3	R6041	C-7	R6210	E-8	C3306	C-2	C6025	F-8
R3004	F-6	R3365	C-3	R5405	F-3	R6042	C-7	R6211	F-8	C3307	C-2	C6026	E-8
R3005	F-6	R3366	B-3	R5406	G-3	R6043	C-7	R6212	E-8	C3310	C-2	C6027	F-8
R3007	F-5	R3369	B-3	R5501	G-3	R6044	C-7	R6213	F-8	C3311	B-3	C6028	F-8
R3009	F-5	R3370	C-4	R5502	G-3	R6045	D-8	R6214	E-8	C3312	B-3	C6029	D-2
R3010	D-5	R3372	B-3	R5504	F-3	R6046	D-8	R6215	D-9	C3315	C-2	C6030	E-9
R3011	D-5	R3375	D-4	R5505	F-3	R6047	C-7	R6216	D-9	C3316	C-2	C6031	B-7
R3012	F-5	R3377	C-4	R5508	G-3	R6048	C-7	R6217	D-9	C3317	C-2	C6032	B-4
R3014	F-5	R3378	C-4	R5510	E-3	R6049	C-7	R6218	D-8	C3318	C-2	C6201	C-8
R3015	F-6	R3379	C-4	R5511	F-4	R6050	D-7	R6221	E-8	C3361	C-4	C6202	C-9
R3016	F-4	R3380	C-4	R5512	E-3	R6051	C-7	R6222	E-8	C3362	C-3	C6203	C-9
R3017	G-5	R3381	C-3	R5513	E-3	R6052	D-7	R6301	A-3	C3363	C-3	C6204	C-9
R3021	F-5	R3390	B-2	R5514	F-3	R6053	D-7	R6302	A-2	C3364	B-3	C6205	D-8
R3022	G-5	R4001	F-6	R5602	F-2	R6054	D-7	R6303	A-4	C3365	C-4	C6206	D-9
R3023	G-5	R4002	F-5	R5603	E-2	R6055	D-7	R6305	A-6	C4001	E-6	C6207	E-8
R3024	F-5	R4003	F-5	R5604	E-3	R6056	D-7	R6307	A-8	C4003	F-6	C6208	E-8
R3025	D-5	R4004	F-6	R5610	E-3	R6059	E-7	R6308	A-6	C4004	F-6	C6209	E-8
R3026	D-5	R4005	F-6	R5611	F-2	R6061	D-7	C3001	D-5	C4008	F-6	C6210	E-9
R3027	F-5	R4006	F-6	R5612	E-3	R6063	D-7	C3002	E-5	C4010	F-6	C6212	E-8
R3028	F-5	R4008	F-6	R5613	E-2	R6068	E-7	C3003	E-5	C4015	G-6	C6213	E-8
R3029	G-5	R4009	F-6	R5902	E-2	R6071	E-7	C3004	E-4	C4018	E-6	C6214	E-9
R3030	D-5	R4011	E-6	R5931	G-3	R6072	D-6	C3005	D-5	C4030	H-10	C6216	E-9
R3031	E-5	R4012	G-6	R5932	F-2	R6073	E-6	C3006	E-5	C4032	F-6	C6217	D-8
R3032	E-6	R4013	F-6	R5933	F-2	R6074	E-7	C3008	G-4	C4103	H-7	C6220	F-8
R3033	G-2	R4014	G-6	R5951	D-2	R6075	E-7	C3010	F-5	C4104	H-7	C6221	E-8
R3034	D-5	R4015	F-5	R5952	E-2	R6076	E-7	C3011	F-5	C4106	H-7		
R3035	E-6	R4018	F-6	R5953	E-2	R6077	E-7	C3012	G-4	C4153	G-10		
R3036	D-4	R4021	G-5	R5954	E-3	R6078	E-7	C3013	G-4	C4157	H-10		
R3037	D-4	R4030	H-9	R5955	D-2	R6079	E-7	C3014	D-5	C4158	H-11		

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

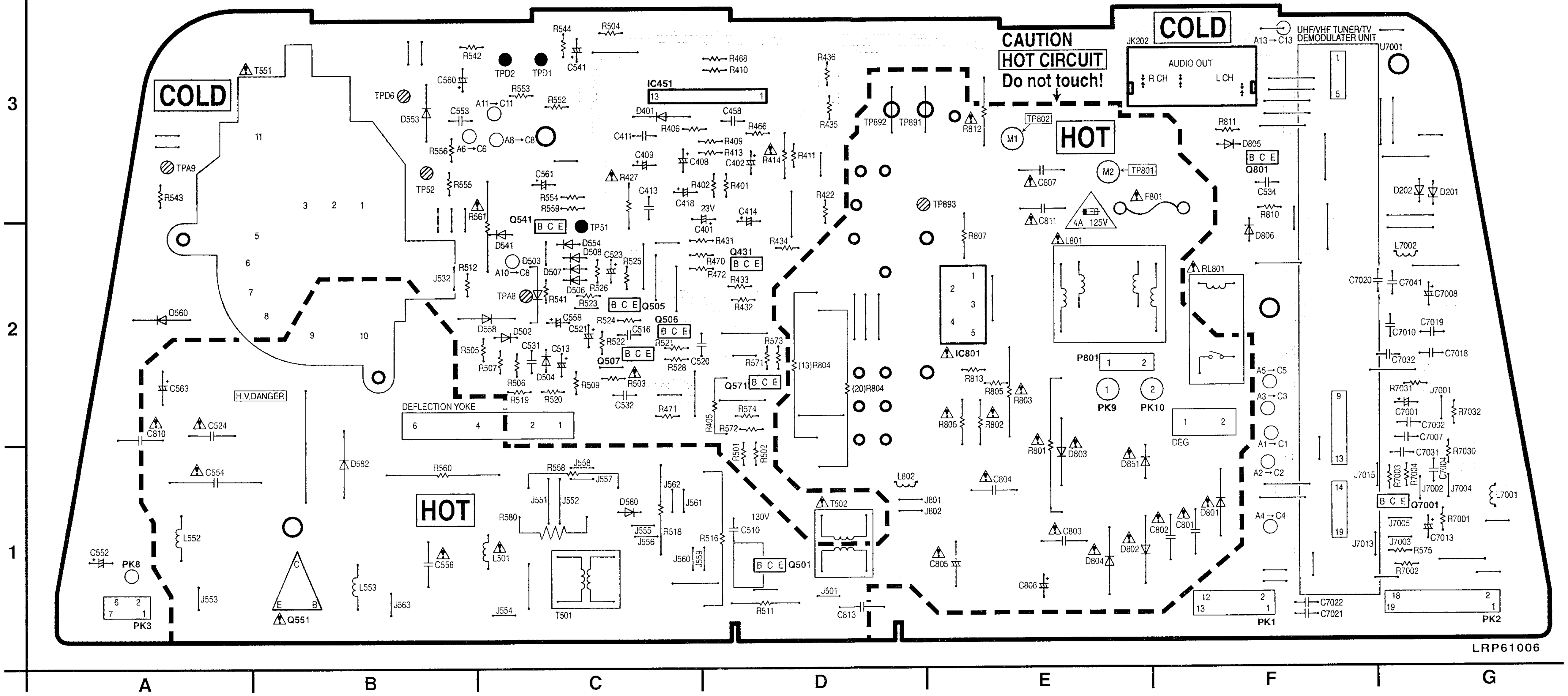
TV MAIN C.B.A. LRM61006Z (A,E) /LRM61006W (B,F) /LRM61006X (C) /LRM61006Y (D) /LRM61006C (G,H) /LRM61006D (I) /LRM61006E (J) /LRM61006A (K)

NOTE:
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NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS. FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING, PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



TV MAIN	
TRANSISTOR	
Q431	D-2
Q501	D-1
Q505	C-2
Q506	C-2
Q507	C-2
Q541	C-3
Q551	B-1
Q571	D-2
Q801	F-3
Q7001	G-1

TV MAIN	
IC	
IC451	C-3
IC801	E-2

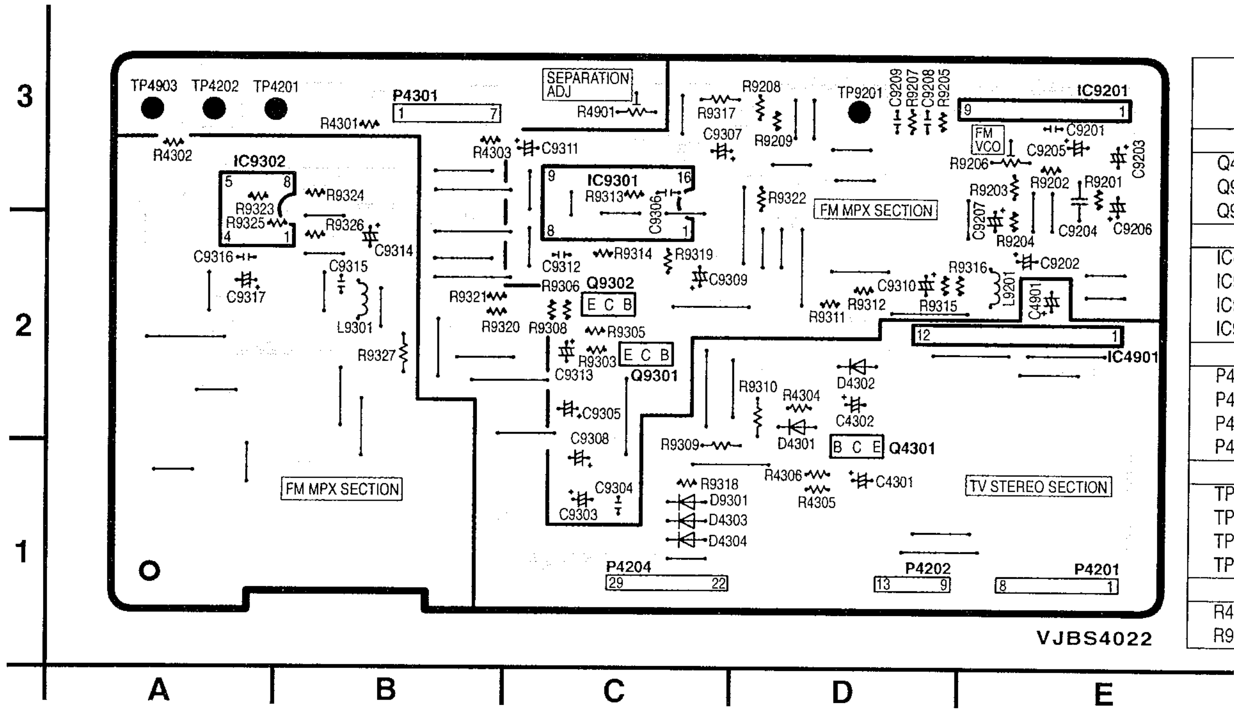
TV MAIN	
CONNECTOR	
A1	F-2
A2	F-1
A3	F-2
A4	F-1
A5	F-2
A6	B-3
A8	C-3
A10	C-2
A11	B-3
A13	F-3
P801	E-2
PK1	F-1
PK2	G-1
PK3	A-1
PK8	A-1
PK9	E-2
PK10	E-2

TV MAIN	
TEST POINT	
TP51	C-3
TP52	B-3
TP801	E-3
TP802	E-3
TP891	D-3
TP892	D-3
TP893	E-3
TPA8	C-2
TPA9	A-3
TPD1	C-3
TPD2	C-3
TPD6	B-3

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	i
VV2018W	J
PV-M2058	K
Not Used	Z

TV STEREO C.B.A. VEPS4022A (K)

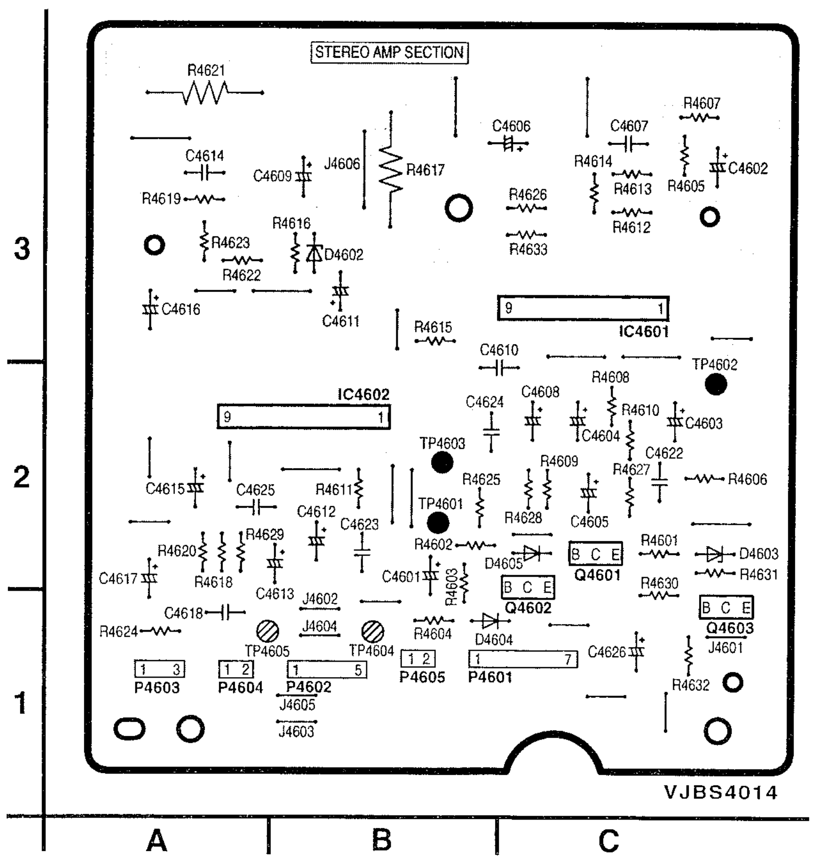


TV STEREO	
TRANSISTOR	
Q4301	D-1
Q9301	C-2
Q9302	C-2
IC	
IC4901	E-2
IC9201	E-3
IC9301	C-3
IC9302	A-3
CONNECTOR	
P4201	E-1
P4202	D-1
P4204	C-1
P4301	B-3
TEST POINT	
TP4201	A-3
TP4202	A-3
TP4903	A-3
TP9201	D-3
ADJUSTMENT	
R4901	C-3
R9206	D-3

LEADLESS COMPONENT PARTS LOCATION GUIDE
TV STEREO C.B.A.

R4301	B-3	R9314	C-2
R4302	A-3	R9315	D-2
R4303	B-3	R9316	D-2
R4304	D-2	R9318	C-1
R4305	D-1	R9319	C-2
R4306	D-1	R9320	B-2
R9201	E-3	R9321	B-2
R9202	E-3	R9322	D-3
R9203	E-3	R9323	A-3
R9204	E-2	R9324	B-3
R9205	D-3	R9325	A-2
R9207	D-3	R9326	B-2
R9208	D-3	C9201	E-3
R9209	D-3	C9208	D-3
R9303	C-2	C9209	D-3
R9305	C-2	C9304	C-1
R9306	C-2	C9306	C-2
R9308	C-2	C9312	C-2
R9311	D-2	C9315	B-2
R9312	D-2	C9316	C-2
R9313	C-3		

STEREO AMP C.B.A. VEPS4014D (K)



NOTE:
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NOTE:
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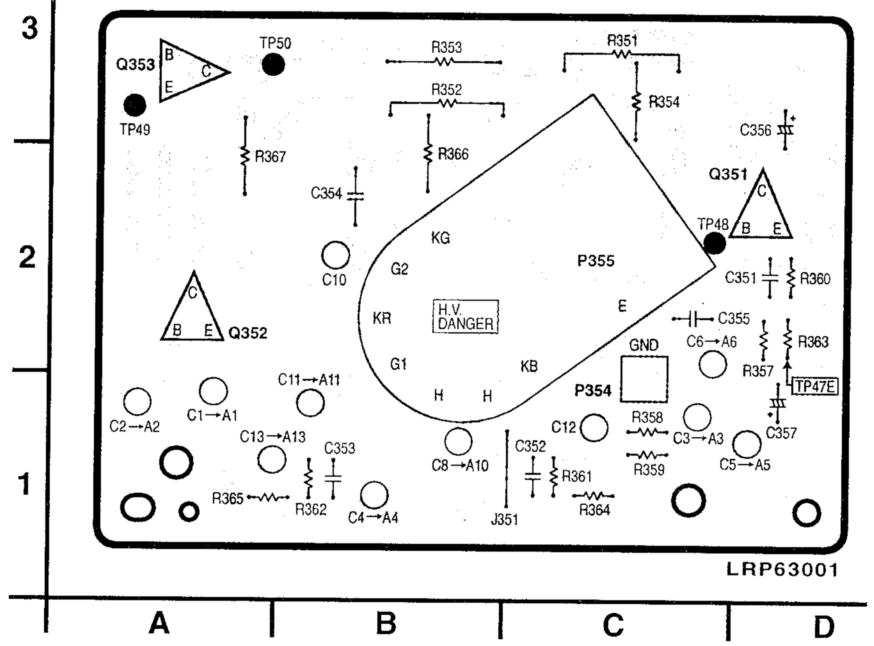
STEREO AMP	
TRANSISTOR	
Q4601	C-2
Q4602	C-1
Q4603	C-1
IC	
IC4601	C-3
IC4602	B-2
CONNECTOR	
P4601	B-1
P4602	B-1
P4603	A-1
P4604	A-1
P4605	B-1
TEST POINT	
TP4601	B-2
TP4602	C-2
TP4603	B-2
TP4604	B-1
TP4605	A-1

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

CRT C.B.A. LRP63001Z (A,B,C,D,E,F)

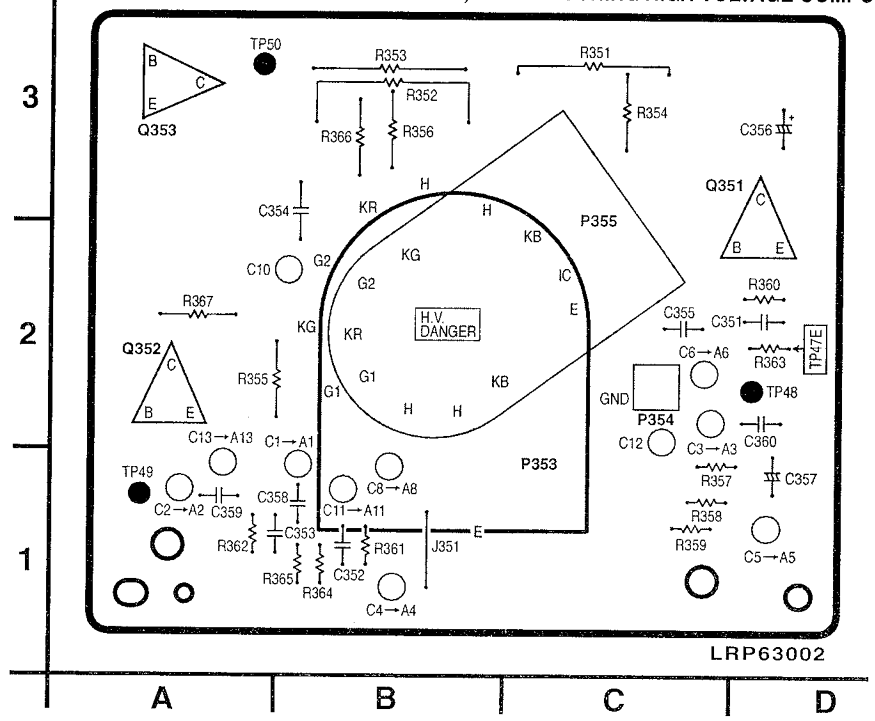
CAUTION: WHEN SERVICING THIS C.B.A. ,AVOID TOUCHING HIGH VOLTAGE COMPONENTS.



CRT	
TRANSISTOR	
Q351	C-2
Q352	A-2
Q353	A-3
CONNECTOR	
C1	A-1
C2	A-1
C3	C-1
C4	B-1
C5	D-1
C6	C-2
C8	B-1
C10	B-2
C11	B-1
C13	A-1
P353	C-1
P354	C-1
P355	C-2
TEST POINT	
TP47E	D-1
TP48	C-2
TP49	A-3
TP50	A-3

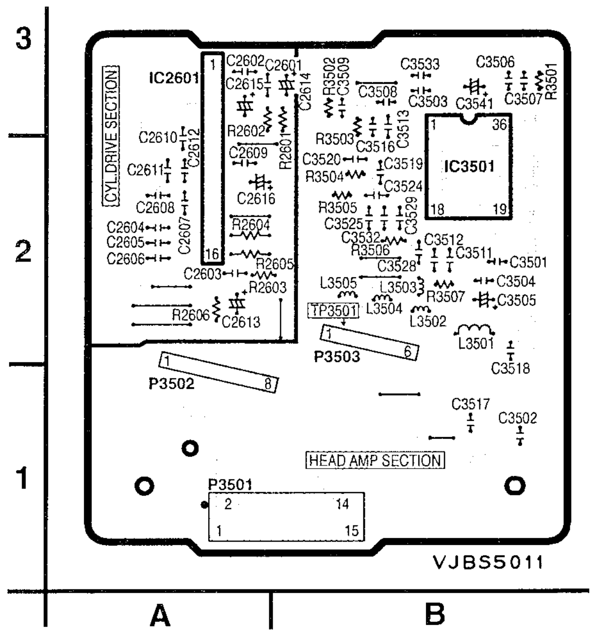
CRT C.B.A. LRP63002A (G,H,K) /LRP63002B (I,J)

CAUTION: WHEN SERVICING THIS C.B.A. ,AVOID TOUCHING HIGH VOLTAGE COMPONENTS.



CRT	
TRANSISTOR	
Q351	C-3
Q352	A-2
Q353	A-3
CONNECTOR	
C1	A-2
C2	A-1
C3	C-2
C4	B-1
C5	D-1
C6	C-2
C8	B-1
C10	A-2
C11	B-1
C12	C-2
C13	A-2
P353	C-1
P354	C-2
P355	C-2
TEST POINT	
TP47E	D-2
TP48	D-2
TP49	A-1
TP50	A-3

HEAD AMP C.B.A. VEPS5011Z1 (E,F,K)



HEAD AMP	
IC	
IC2601	A-3
IC3501	C-2
CONNECTOR	
P3501	A-1
P3502	A-1
P3503	B-2
TEST POINT	
TP3501	C-2

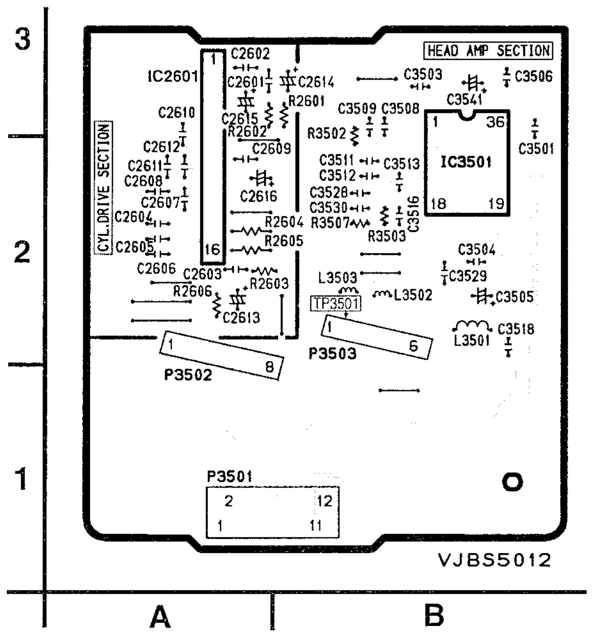
LEADLESS COMPONENT PARTS LOCATION GUIDE
HEAD AMP C.B.A.

R2601	B-2	C2607	A-2	C3516	B-2
R2602	A-3	C2608	A-2	C3517	B-1
R2603	A-2	C2609	A-2	C3518	B-1
R2606	A-2	C2610	A-3	C3519	B-2
R3501	B-3	C2611	A-2	C3520	B-2
R3502	B-3	C2612	A-2	C3524	B-2
R3503	B-2	C3501	B-2	C3525	B-2
R3504	B-2	C3502	B-1	C3528	B-2
R3505	B-2	C3503	B-3	C3529	B-2
R3506	B-2	C3504	B-2	C3532	B-2
R3507	B-2	C3506	B-3	C3533	B-3
C2601	B-3	C3507	B-3	L3502	B-2
C2602	A-3	C3508	B-3	L3503	B-2
C2603	A-2	C3509	B-3	L3504	B-2
C2604	A-2	C3511	B-2	L3505	B-2
C2605	A-2	C3512	B-2		
C2606	A-2	C3513	B-2		

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS. FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING, PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

HEAD AMP C.B.A. VEPS5012Z1 (A,B,C,D,G,H,I,J)



HEAD AMP	
IC	
IC2601	A-3
IC3501	B-2
CONNECTOR	
P3501	A-1
P3502	A-1
P3503	B-2
TEST POINT	
TP3501	B-2

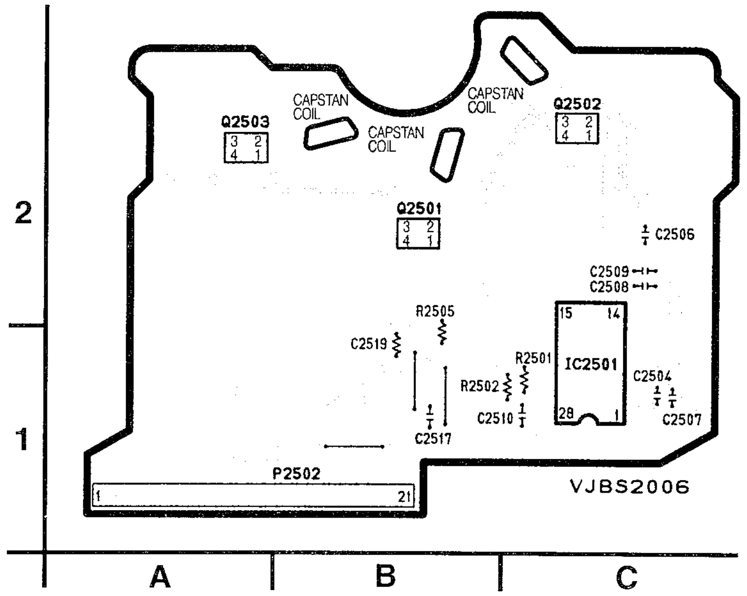
LEADLESS COMPONENT PARTS LOCATION GUIDE
HEAD AMP C.B.A.

R2601	B-3	C2606	A-2	C3509	B-3
R2602	A-3	C2607	A-2	C3511	B-2
R2603	A-2	C2608	A-2	C3512	B-2
R2606	A-2	C2609	A-2	C3513	B-2
R3502	B-2	C2610	A-3	C3516	B-2
R3503	B-2	C2611	A-2	C3518	B-2
R3507	B-2	C2612	A-2	C3528	B-2
C2601	A-3	C3501	B-2	C3529	B-2
C2602	A-3	C3503	B-3	C3530	B-2
C2603	A-2	C3504	B-2	L3502	B-2
C2604	A-2	C3506	B-3	L3503	B-2
C2605	A-2	C3508	B-3		

COMPARISON CHART
OF MODELS & MARKS

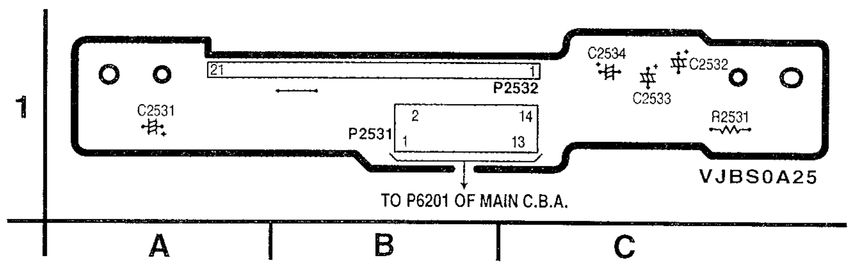
MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

CAPSTAN STATOR UNIT



NOTE:
1.CAPSTAN STATOR UNIT IS SUPPLIED AS A CAPSTAN STATOR KIT ONLY.
HOWEVER, IC2501(AN3845SC) IS AVAILABLE SEPARATELY AS A REPLACEMENT PART.
2.WHEN INSTALLING THE IC2501 OR CAPSTAN STATOR UNIT, BE SURE TO APPLY SILICON GREASE (VFK1301). REFER TO "CAPSTAN STATOR UNIT" OF "DISASSEMBLY/ASSEMBLY PROCEDURES OF MECHANISM" SECTION.

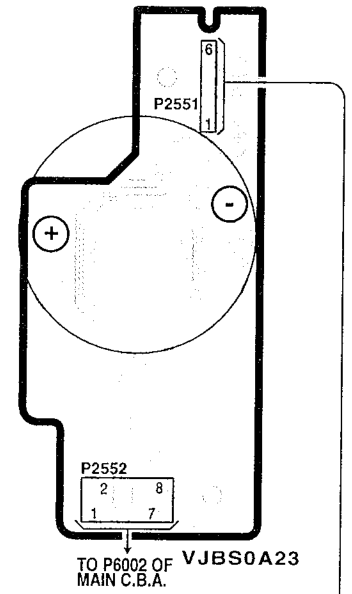
JUNCTION C.B.A. VEPS0A25A



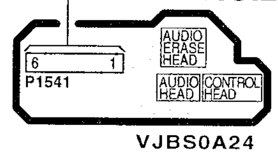
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS. FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING, PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

LOADING MOTOR P.C.B.



ADUIO CONTROL HEAD P.C.B.

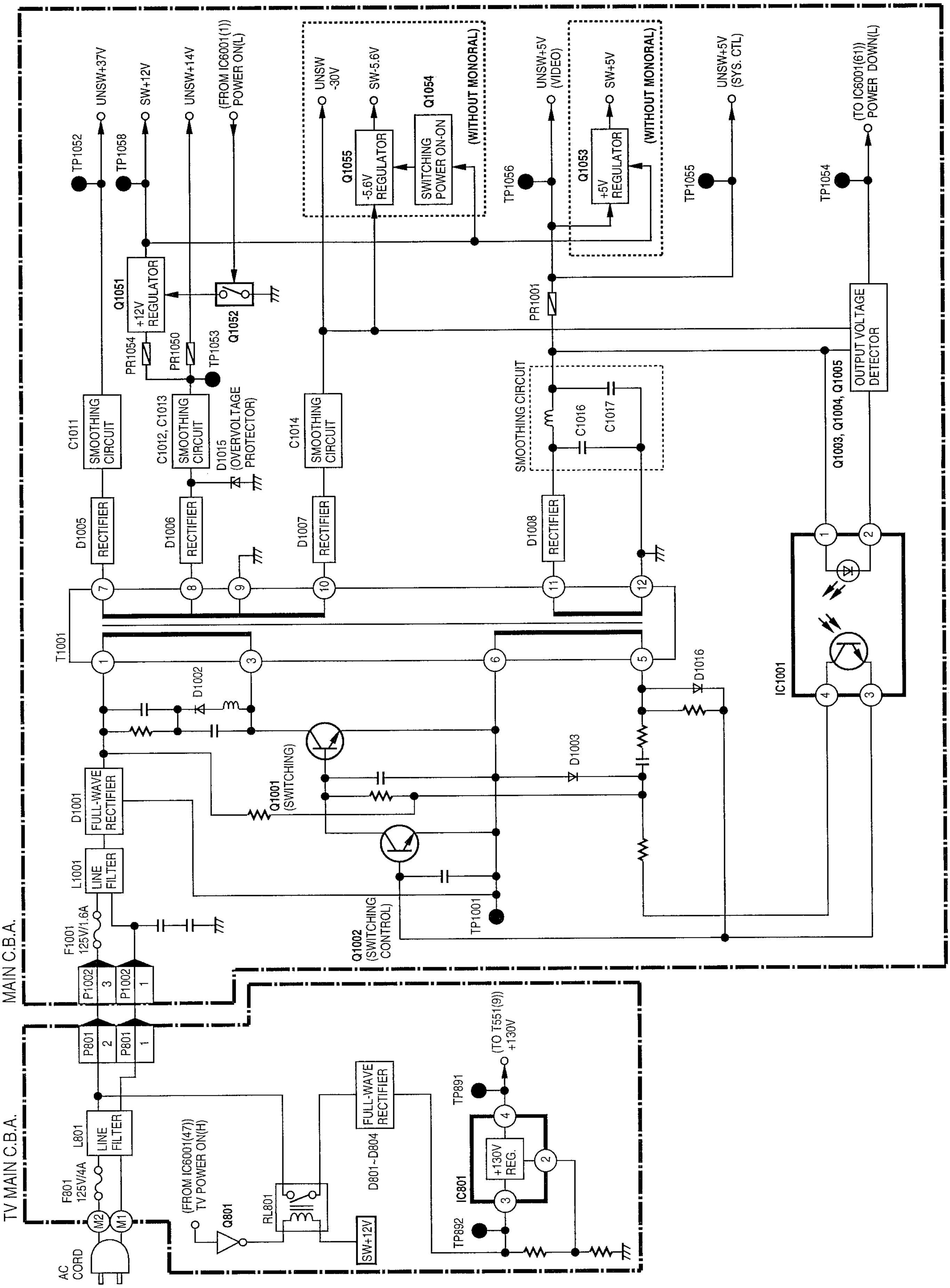


COMPARISON CHART OF MODELS & MARKS

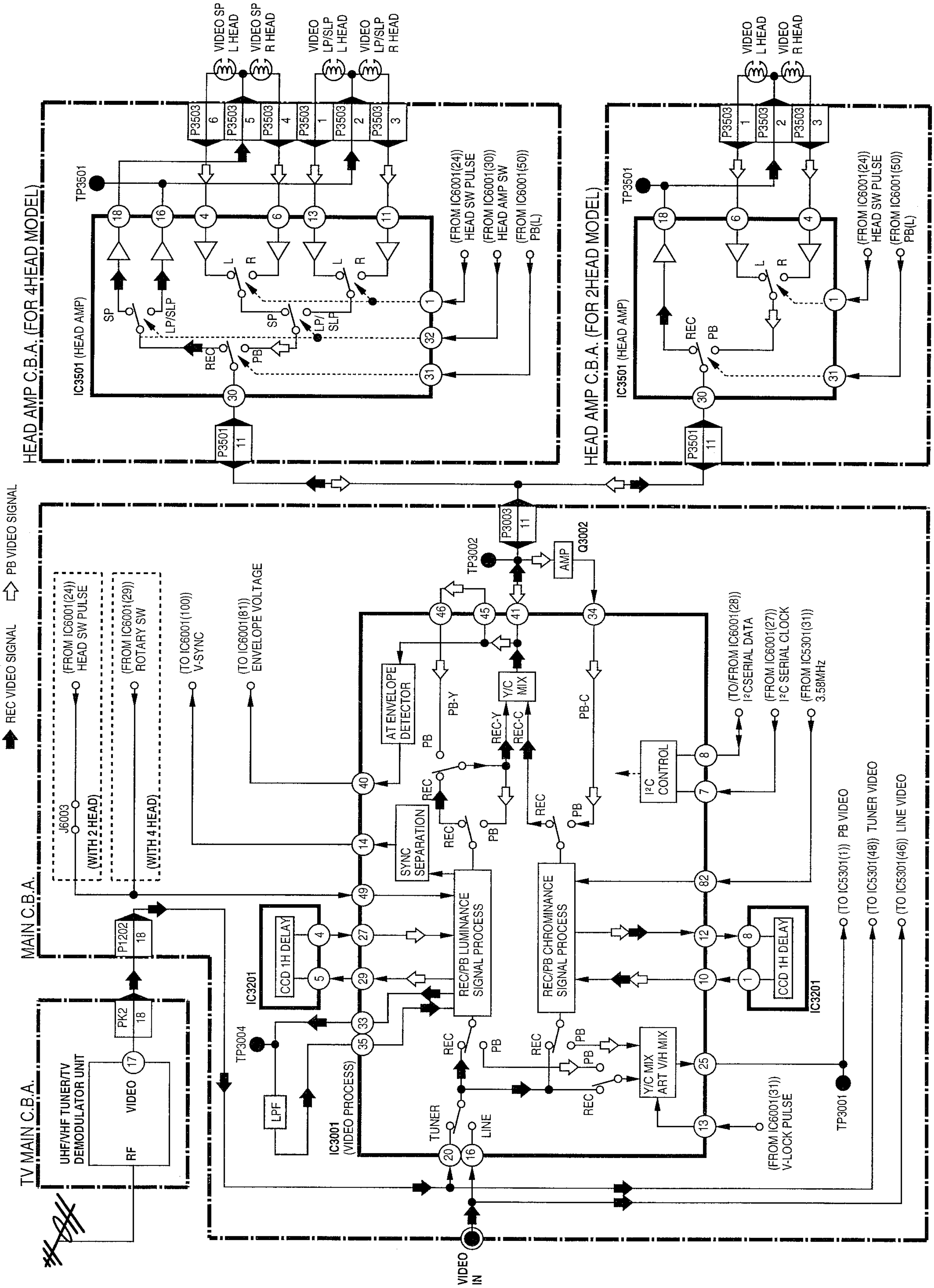
MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K
Not Used	Z

BLOCK DIAGRAMS

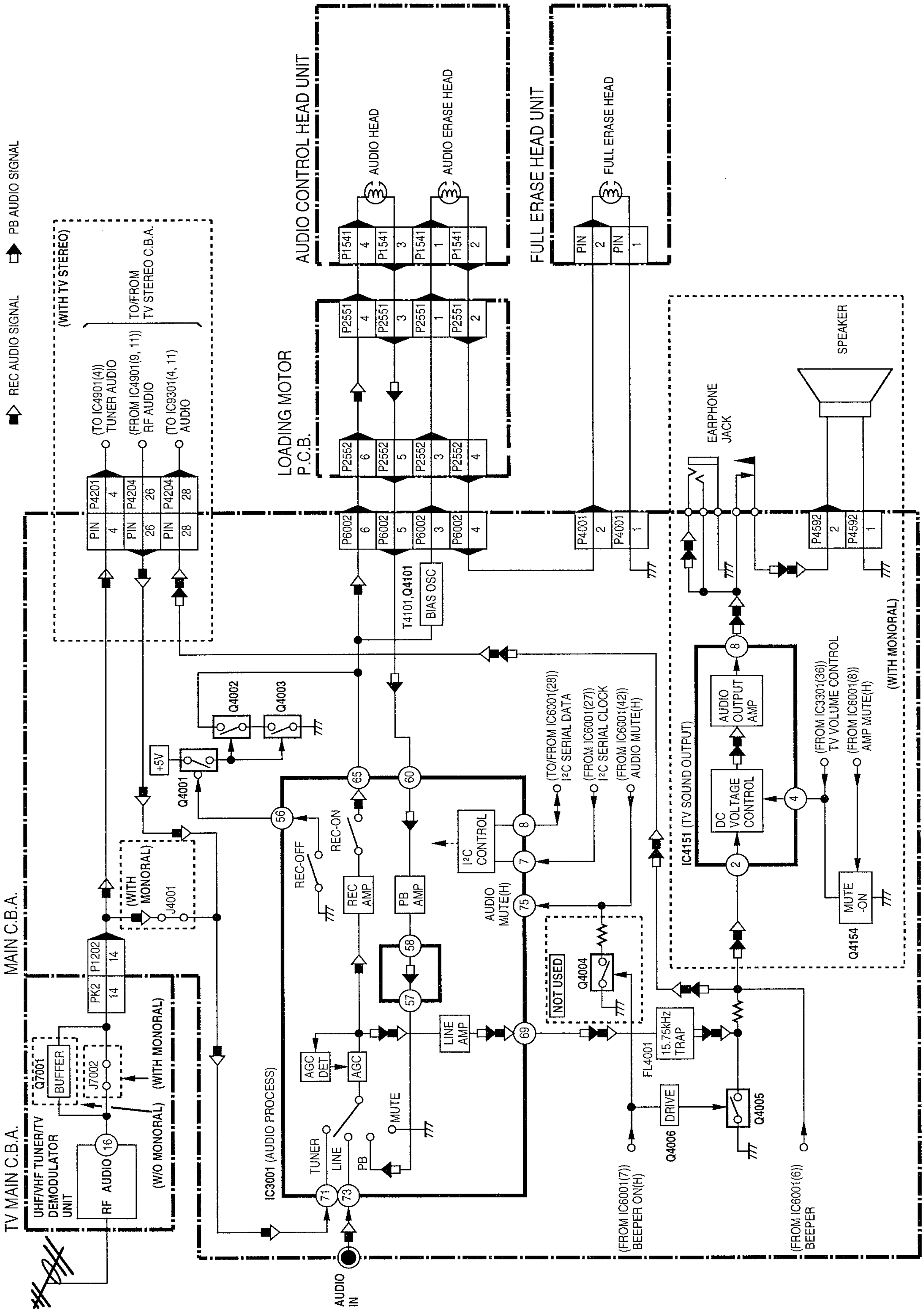
POWER SUPPLY BLOCK DIAGRAM



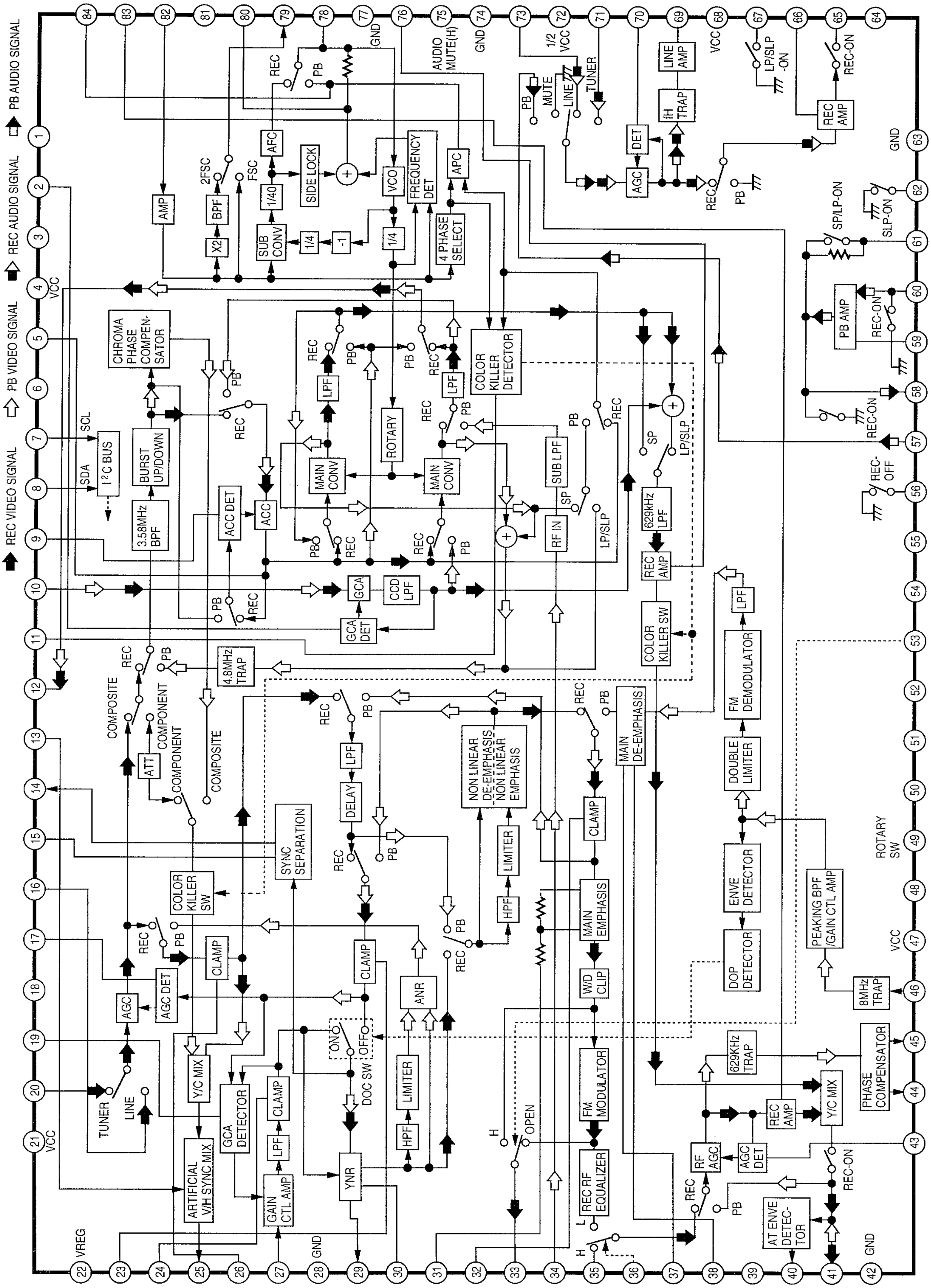
VIDEO SIGNAL PATH BLOCK DIAGRAM



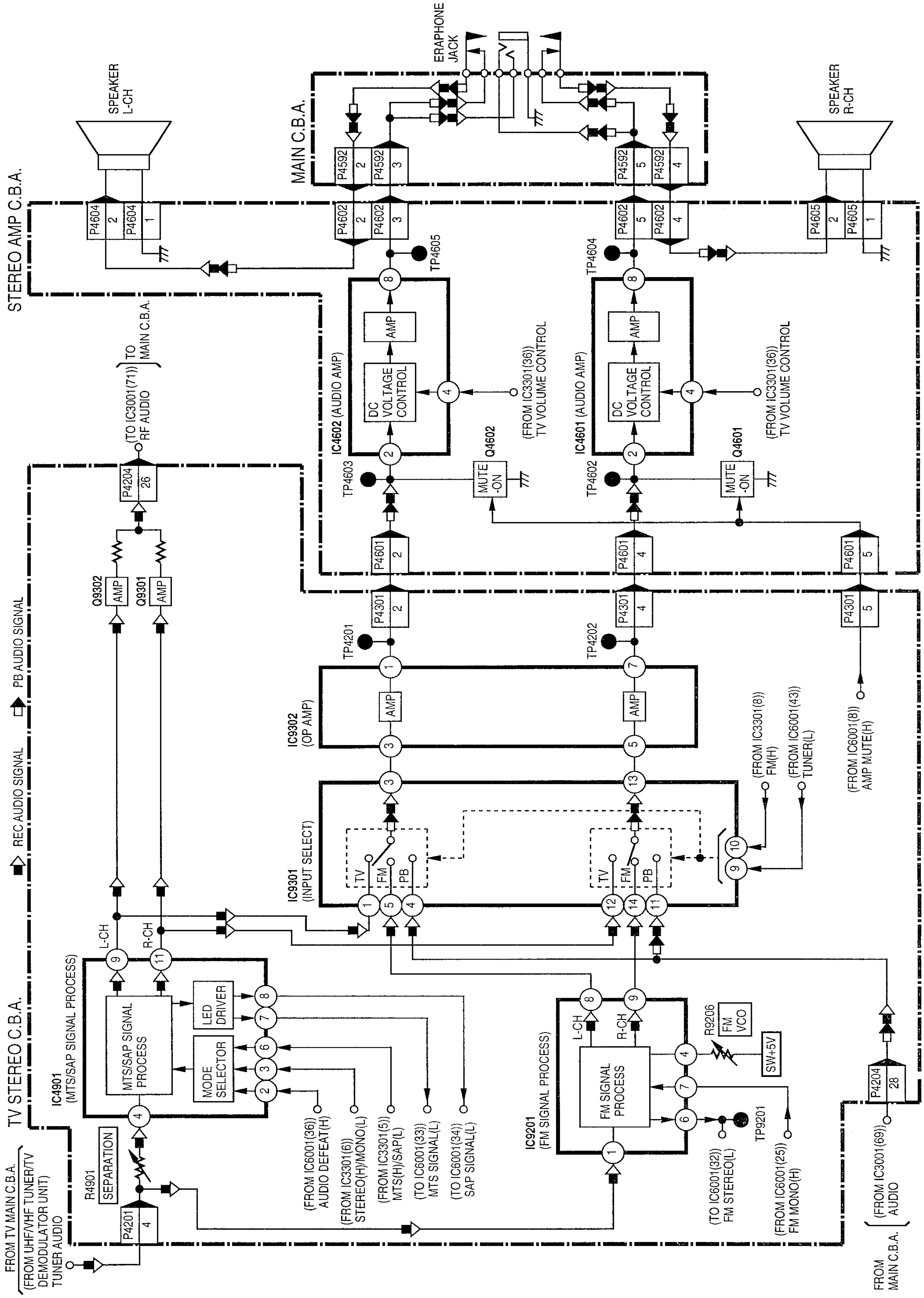
AUDIO SIGNAL PATH BLOCK DIAGRAM



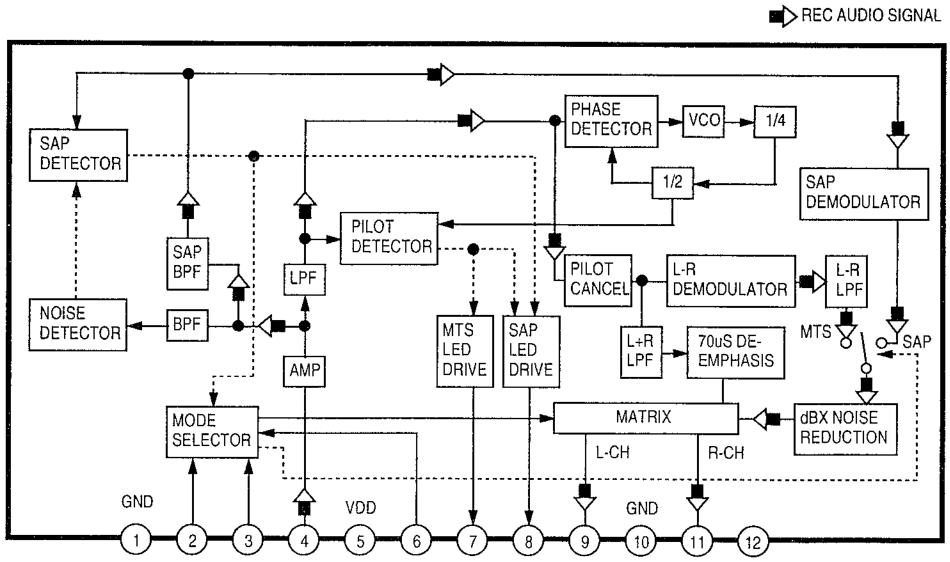
IC3001 VIDEO/AUDIO PROCESS IC-BLOCK DIAGRAM, AN3476FBP



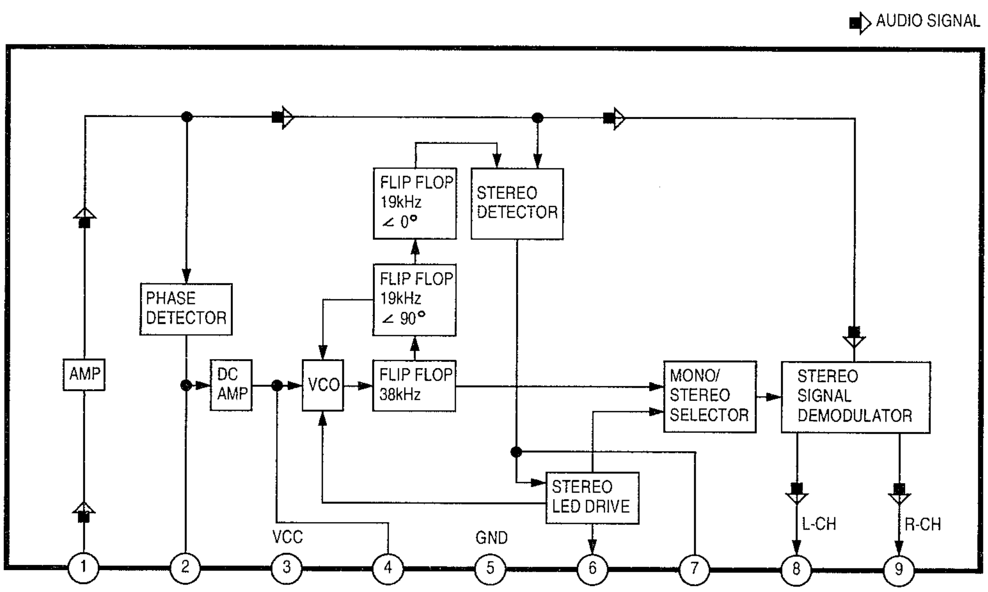
TV STEREO/STEREO AMP BLOCK DIAGRAM



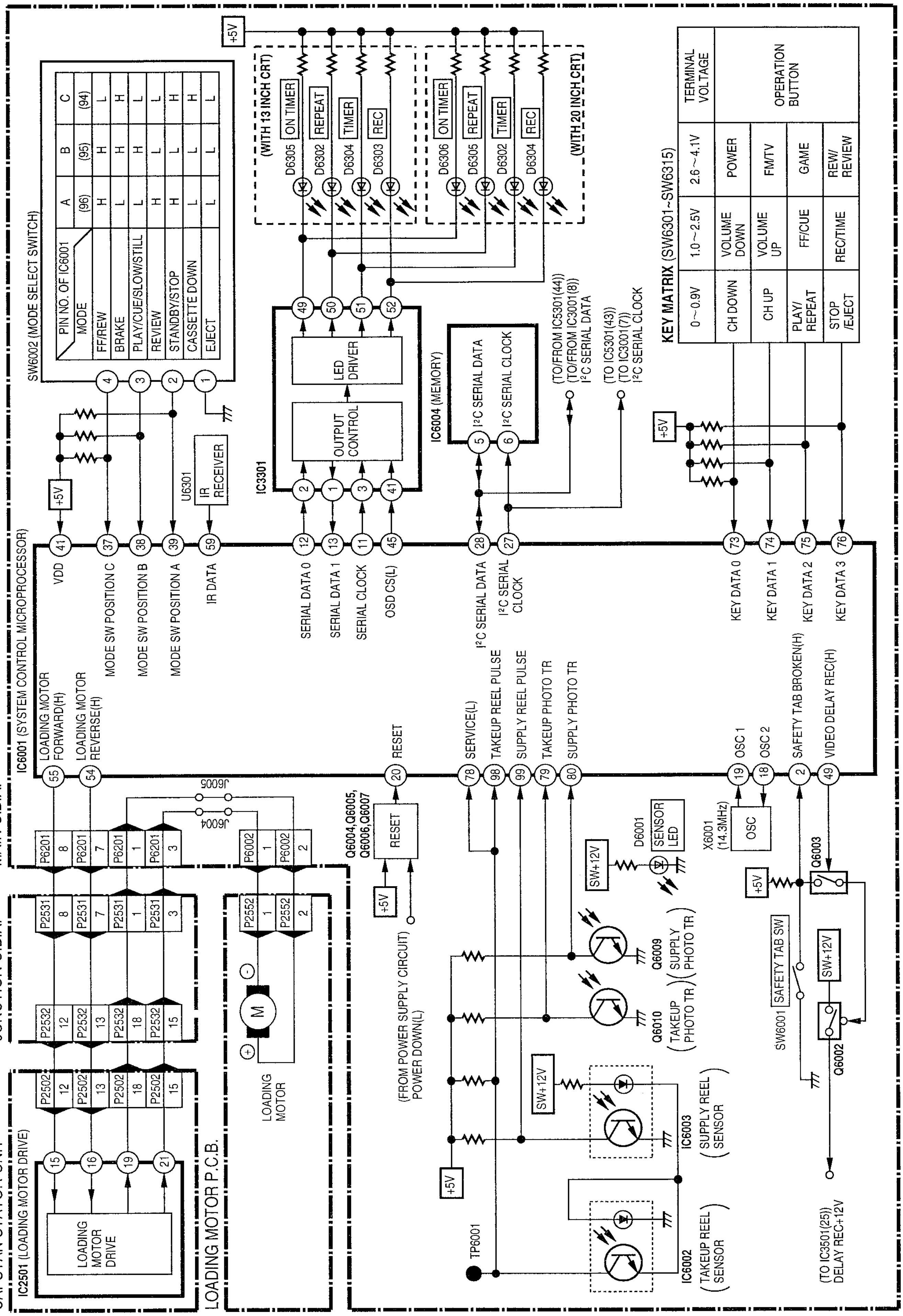
IC4901 MTS/SAP AUDIO PROCESS IC-BLOCK DIAGRAM, VCRS0216



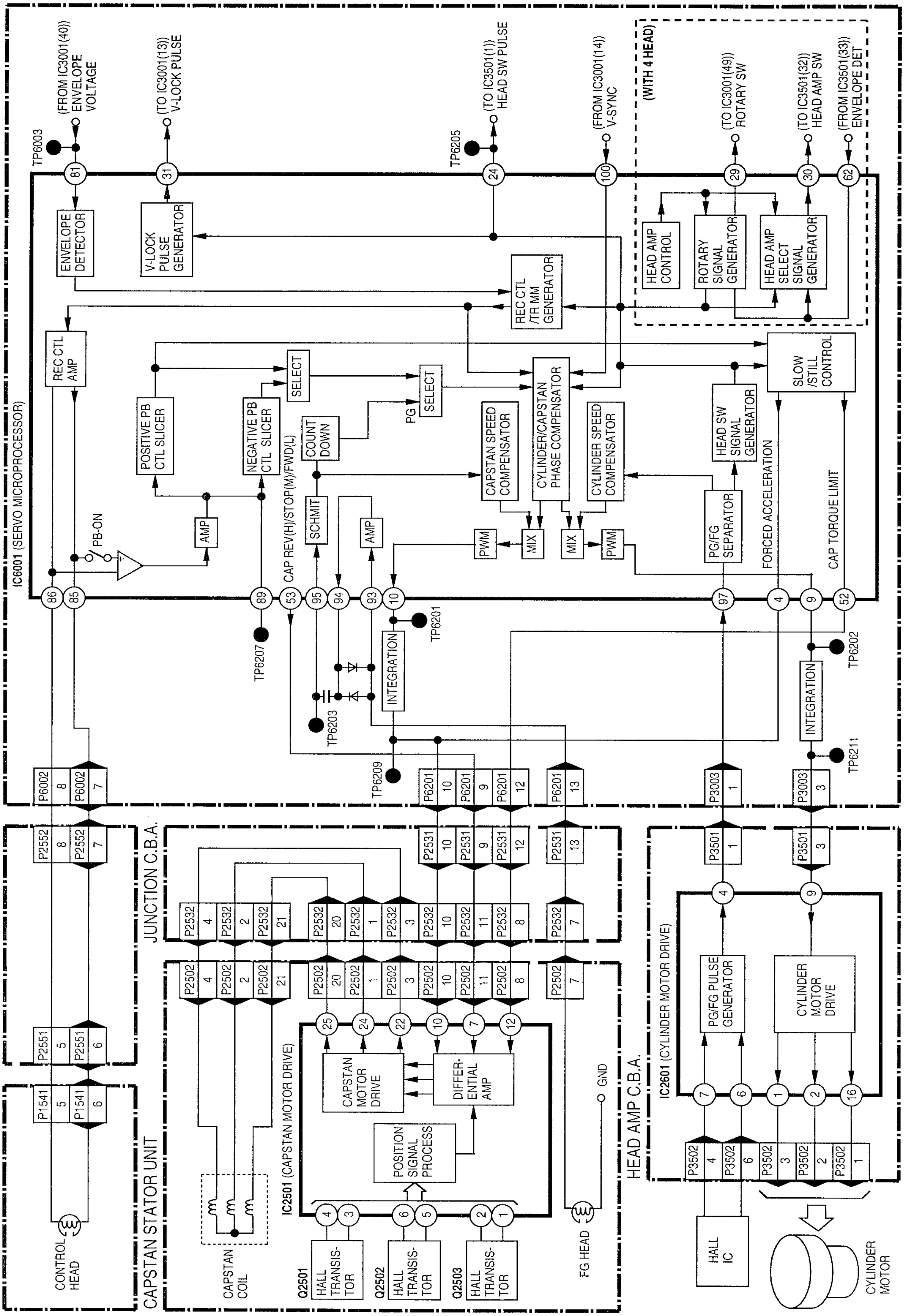
IC9201 FM STEREO MULTIPLEX DEMODULATOR IC-BLOCK DIAGRAM, AN7420



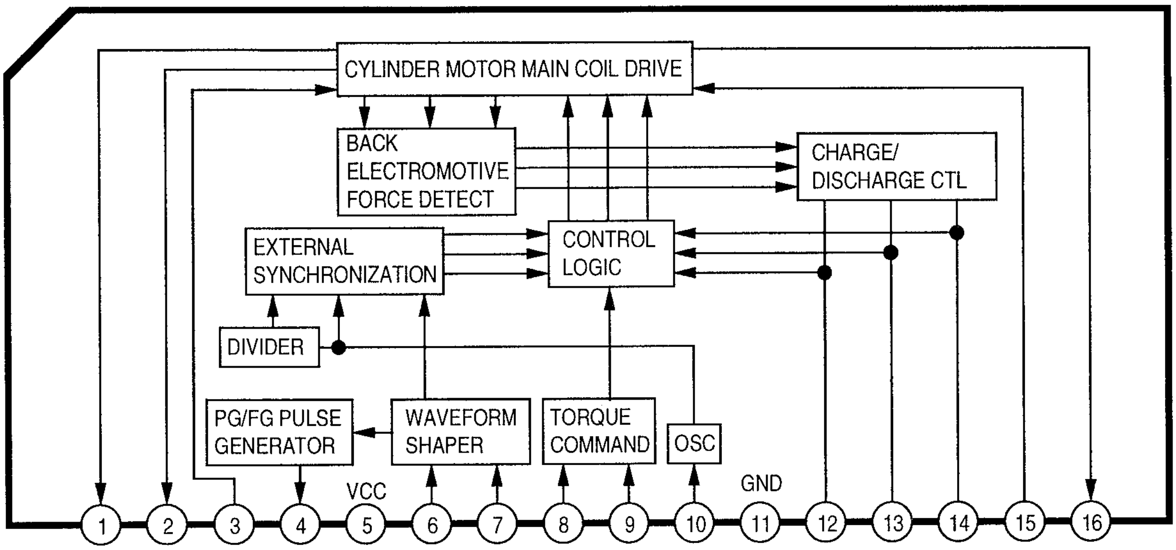
SYSTEM CONTROL BLOCK DIAGRAM



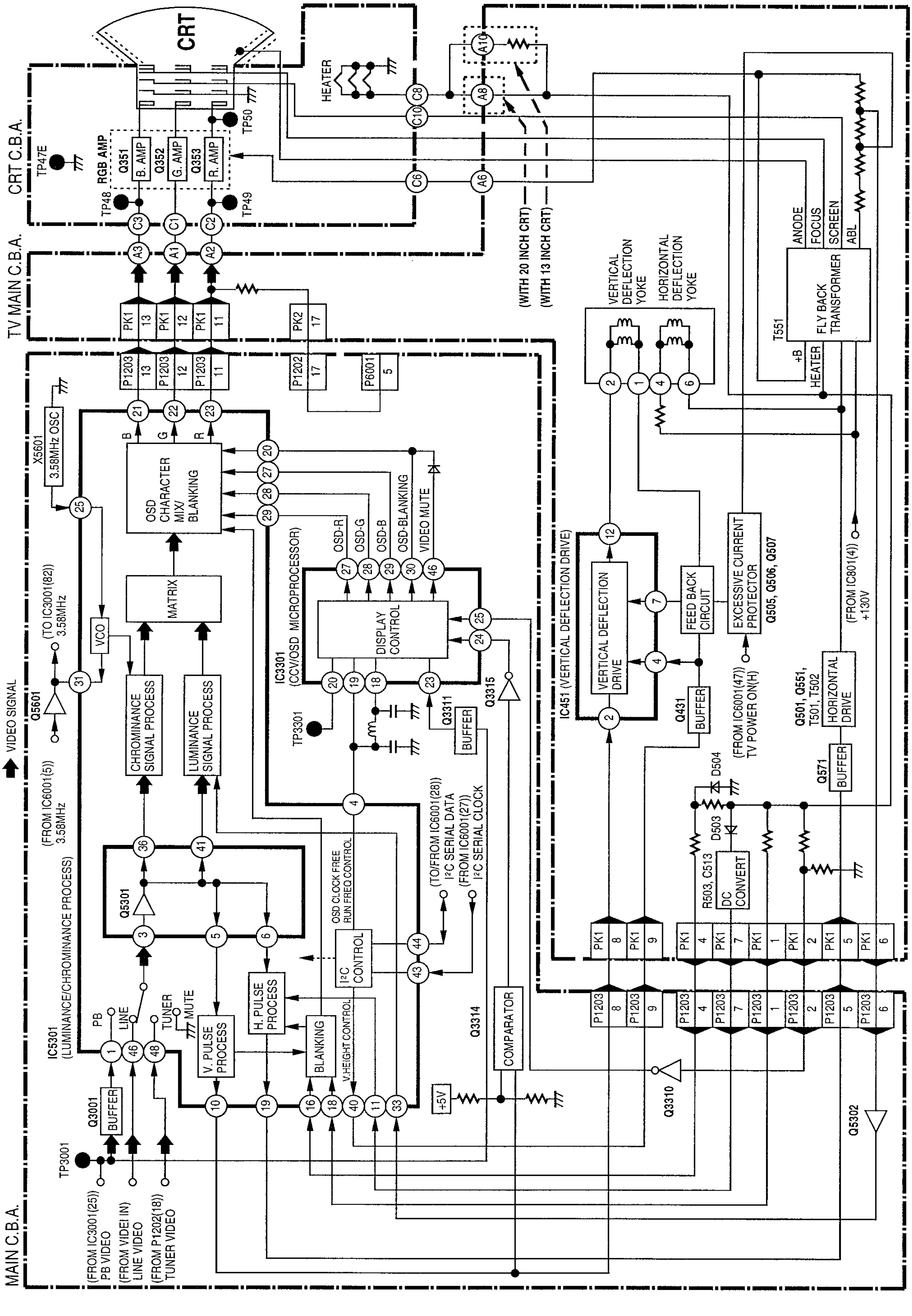
SERVO BLOCK DIAGRAM



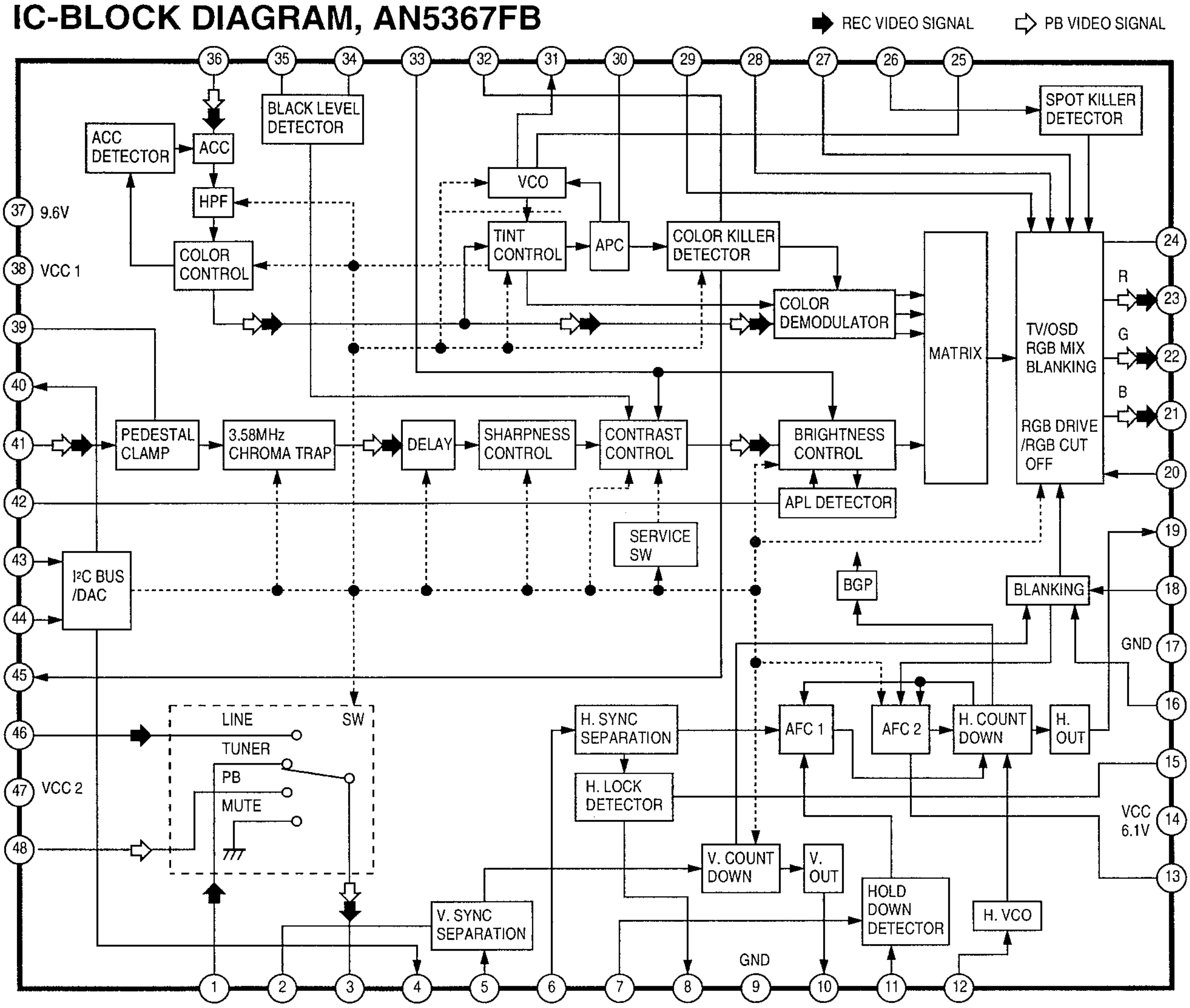
IC2601 CYLINDER MOTOR DRIVE IC-BLOCK DIAGRAM, AN3809K



TV Y/C PROCESS/OSD/CCV/TV MAIN BLOCK DIAGRAM



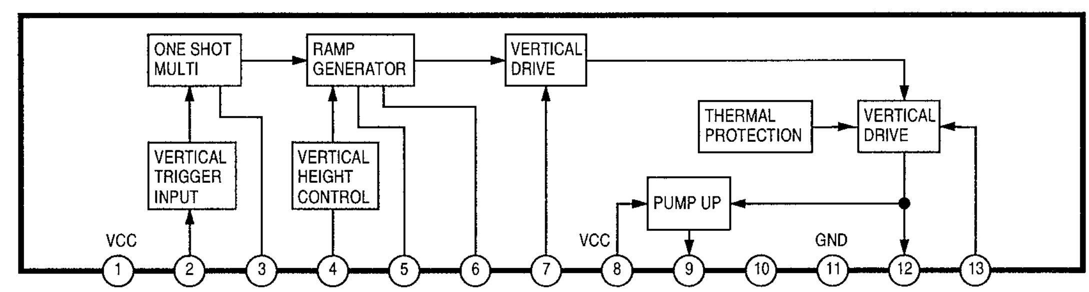
IC5301 LUMINANCE/CHROMINANCE PROCESS IC-BLOCK DIAGRAM, AN5367FB



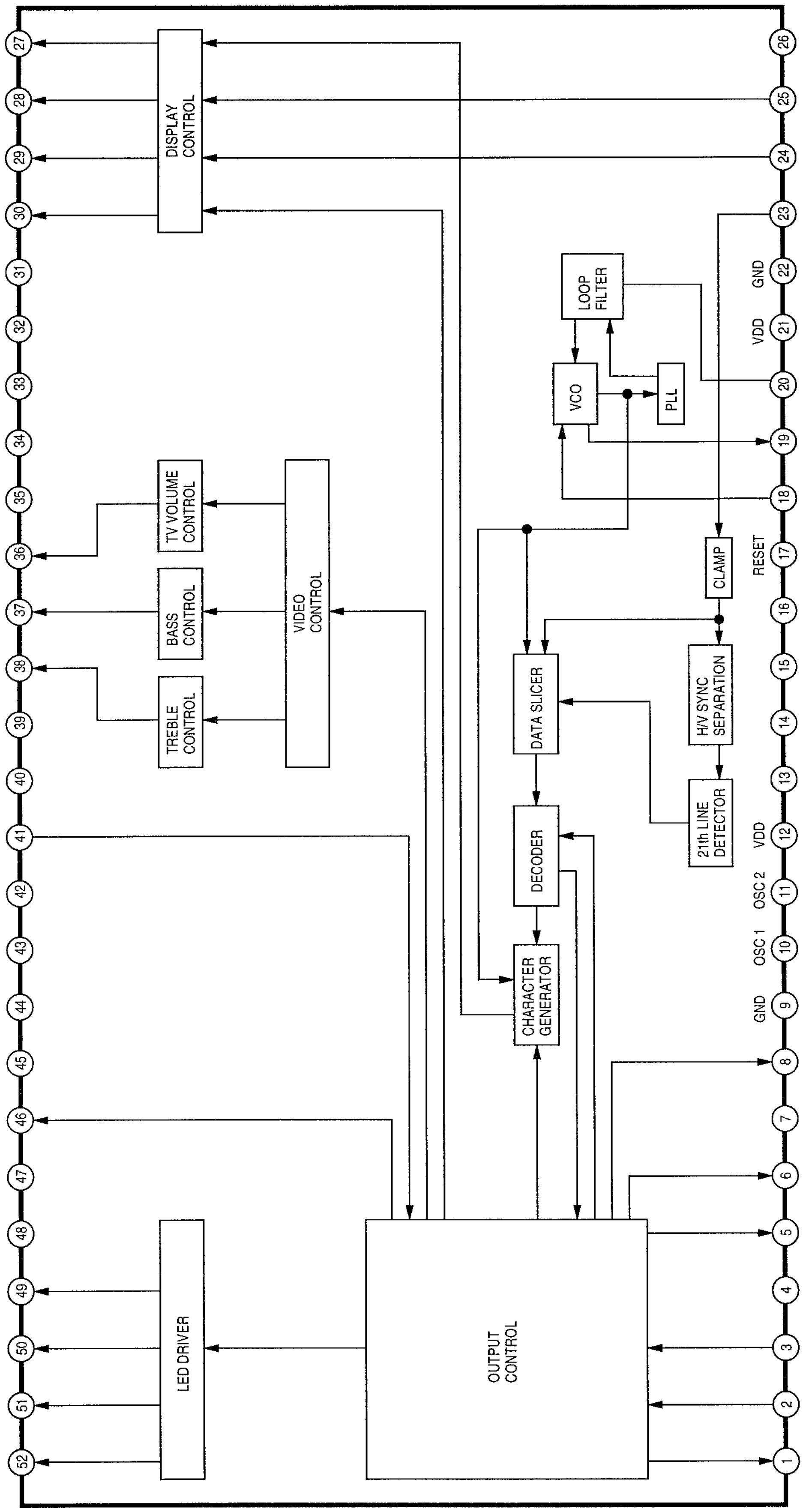
THE FOLLOWING CONTROL FUNCTIONS ARE ADJUSTED BY USING I²C BUS .

- SUB COLOR
- SUB TINT
- SUB BRIGHT
- SUB SHARPNESS
- R CUT-OFF
- G CUT-OFF
- B CUT-OFF
- G DRIVE
- B DRIVE
- SUB CONTRAST
- H CENTER
- V SIZE
- DOT CLOCK

IC451 VERTICAL DEFLECTION DRIVE IC-BLOCK DIAGRAM, LA7837



IC3301 8BIT MICRO PROCESSOR OSD/CCV
IC-BLOCK DIAGRAM, LC8643125F90



EXPLODED VIEWS

❶ MECHANISM (TOP) SECTION

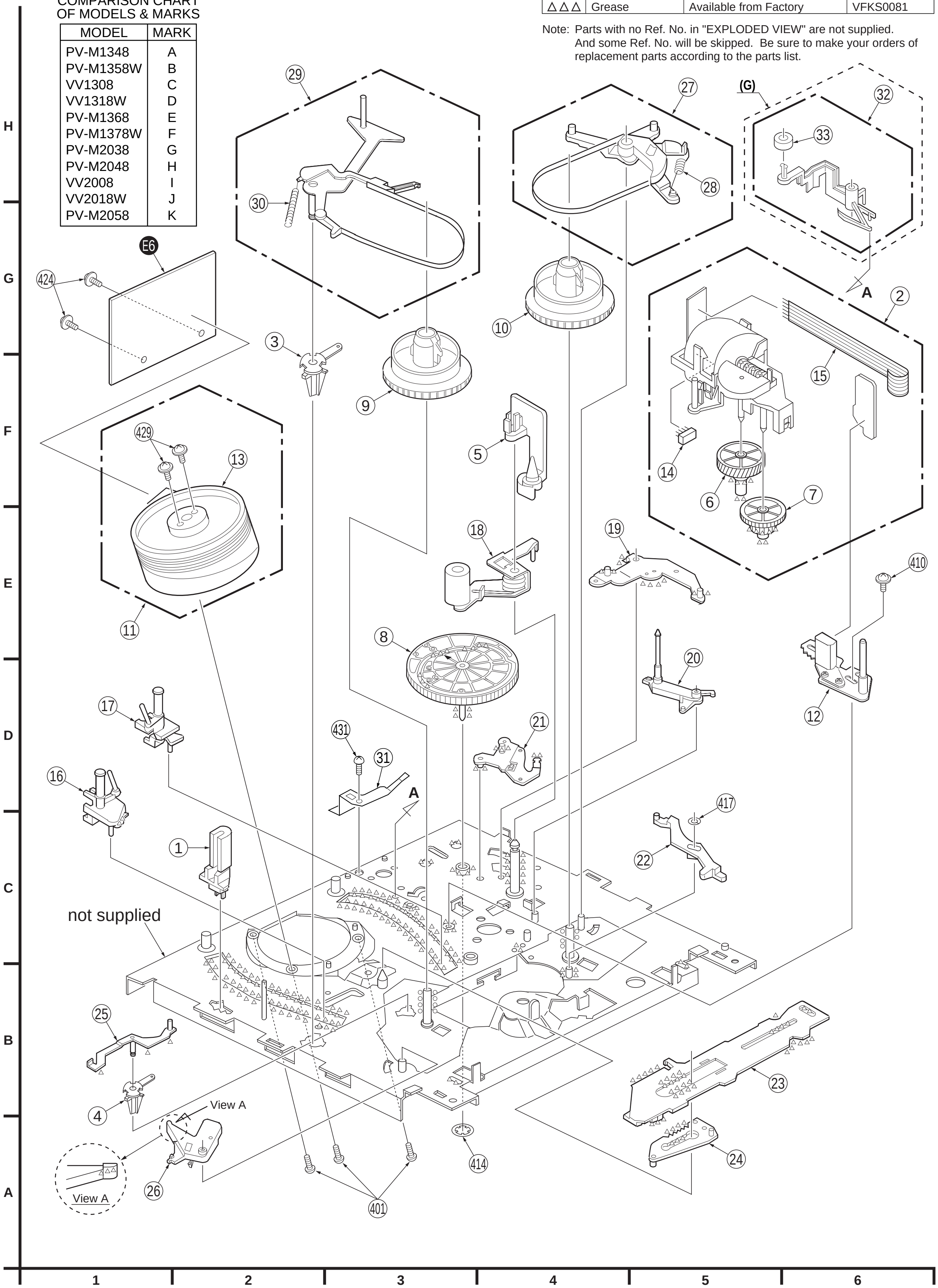
LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
✕✕✕	Silicon Grease	Available from Factory	VFK1301
○○○	Spindle Oil	Purchase from Local Supplier	- - - - - - - -
△△△	Grease	Available from Factory	VFKS0081

Note: Parts with no Ref. No. in "EXPLODED VIEW" are not supplied.
And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.

COMPARISON CHART OF MODELS & MARKS

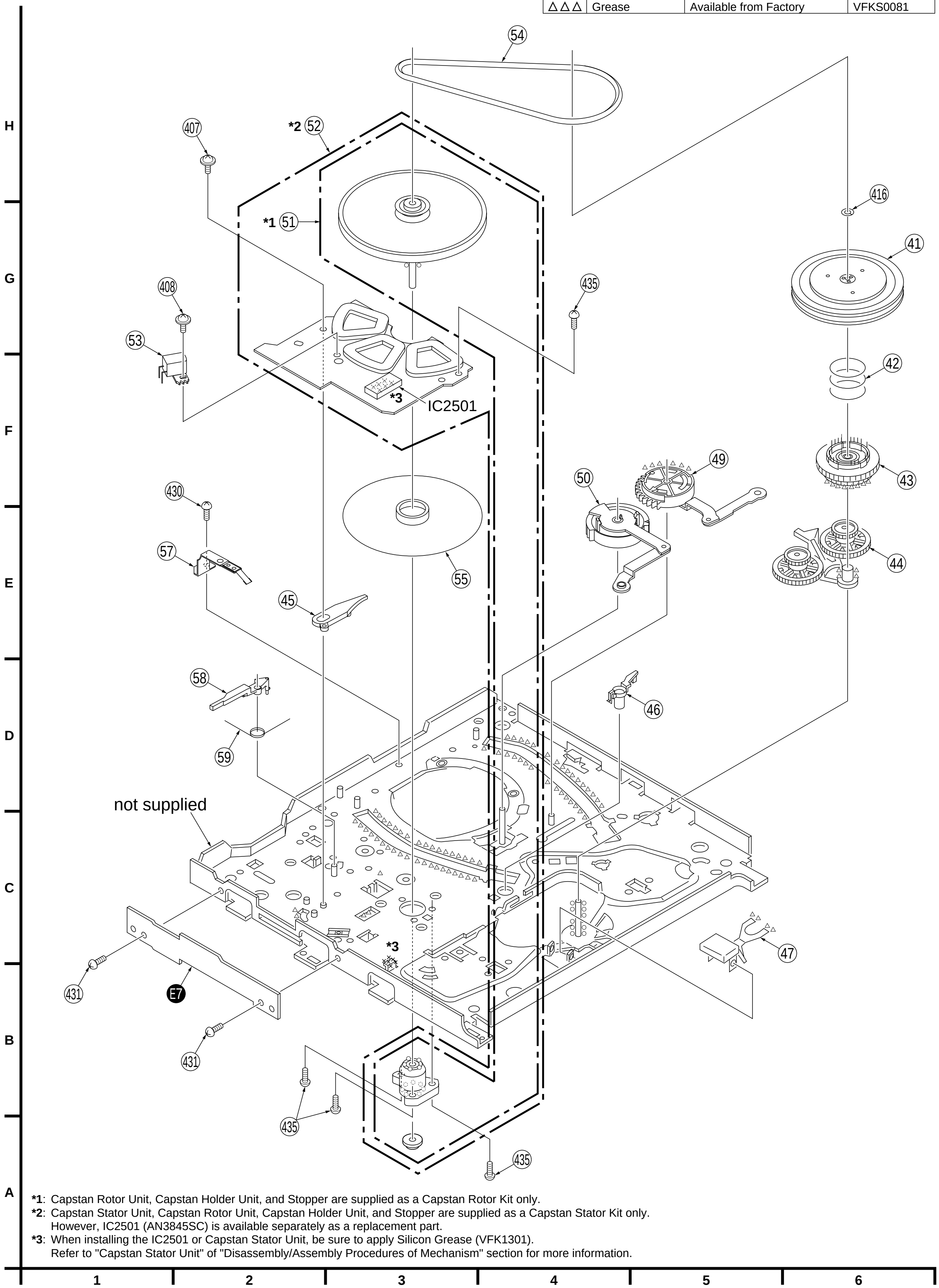
MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K



❷ MECHANISM (BOTTOM) SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
×××	Silicon Grease	Available from Factory	VFK1301
○○○	Spindle Oil	Purchase from Local Supplier	- - - - - - - -
△△△	Grease	Available from Factory	VFKS0081

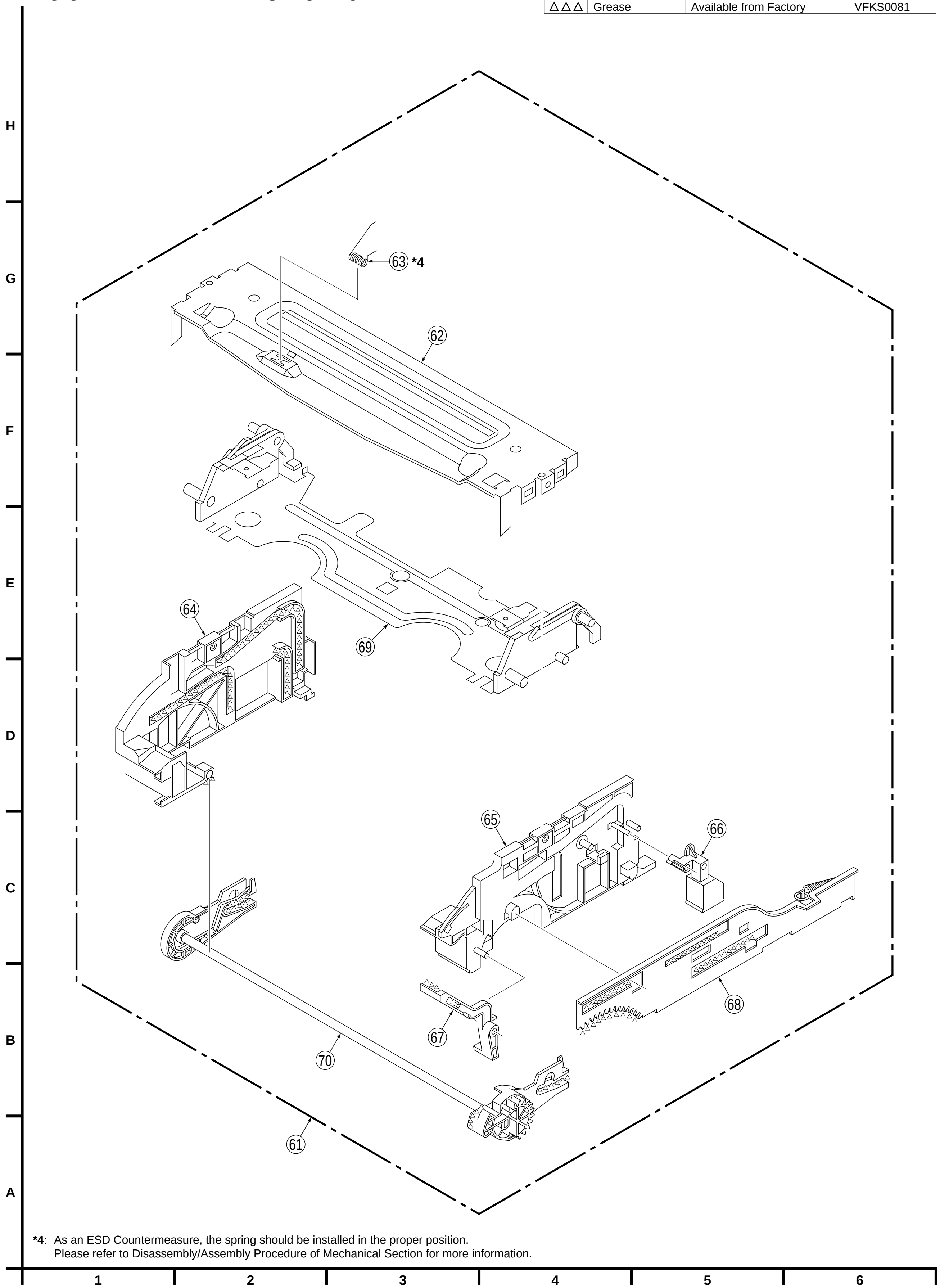


***1**: Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Rotor Kit only.
***2**: Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit only.
However, IC2501 (AN3845SC) is available separately as a replacement part.
***3**: When installing the IC2501 or Capstan Stator Unit, be sure to apply Silicon Grease (VFK1301).
Refer to "Capstan Stator Unit" of "Disassembly/Assembly Procedures of Mechanism" section for more information.

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
×××	Silicon Grease	Available from Factory	VFK1301
○○○	Spindle Oil	Purchase from Local Supplier	- - - - - - - -
△△△	Grease	Available from Factory	VFKS0081

❸ CASSETTE UP COMPARTMENT SECTION



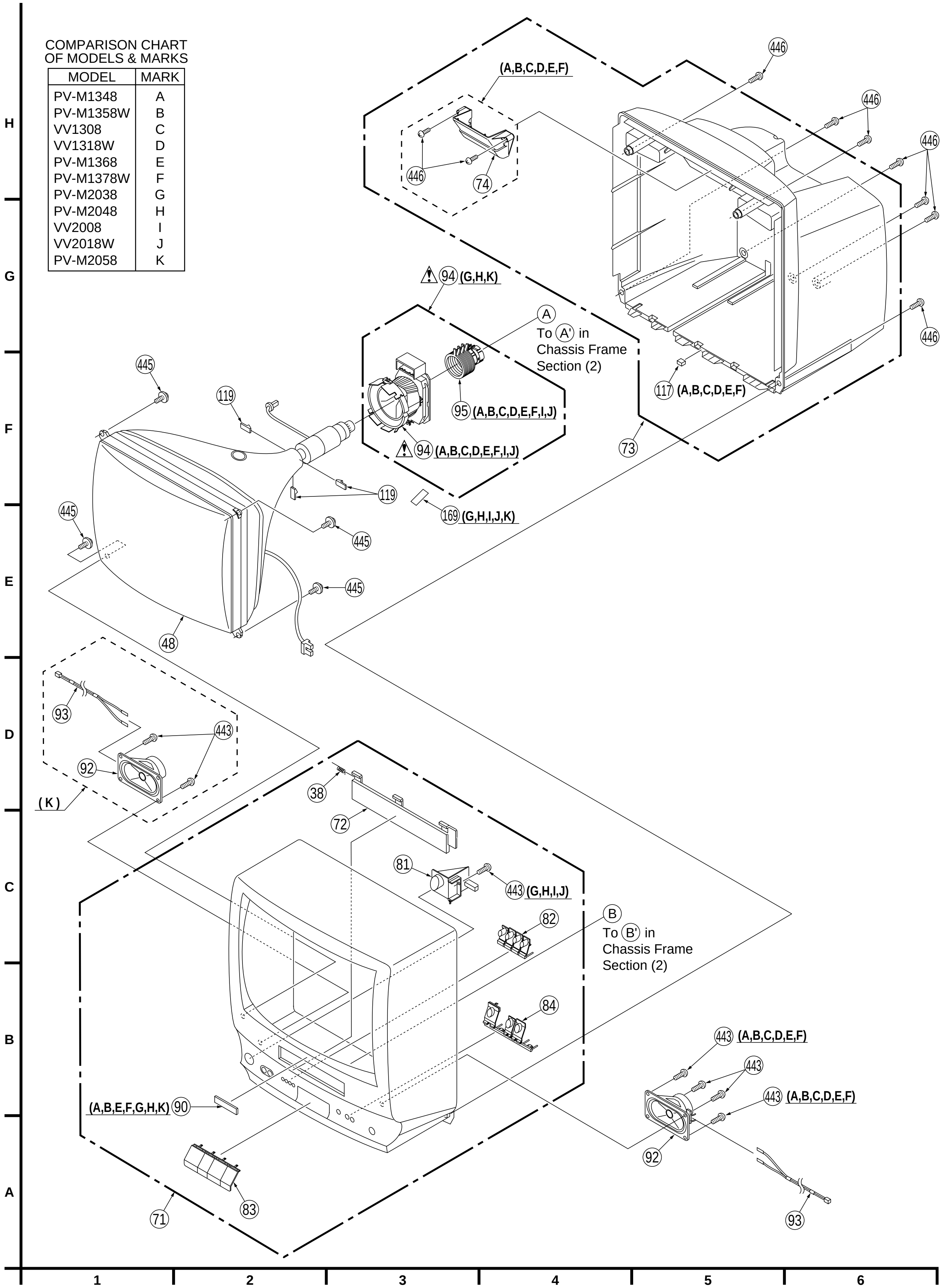
***4**: As an ESD Countermeasure, the spring should be installed in the proper position.
Please refer to Disassembly/Assembly Procedure of Mechanical Section for more information.

❹ CHASSIS FRAME SECTION (1)

IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K

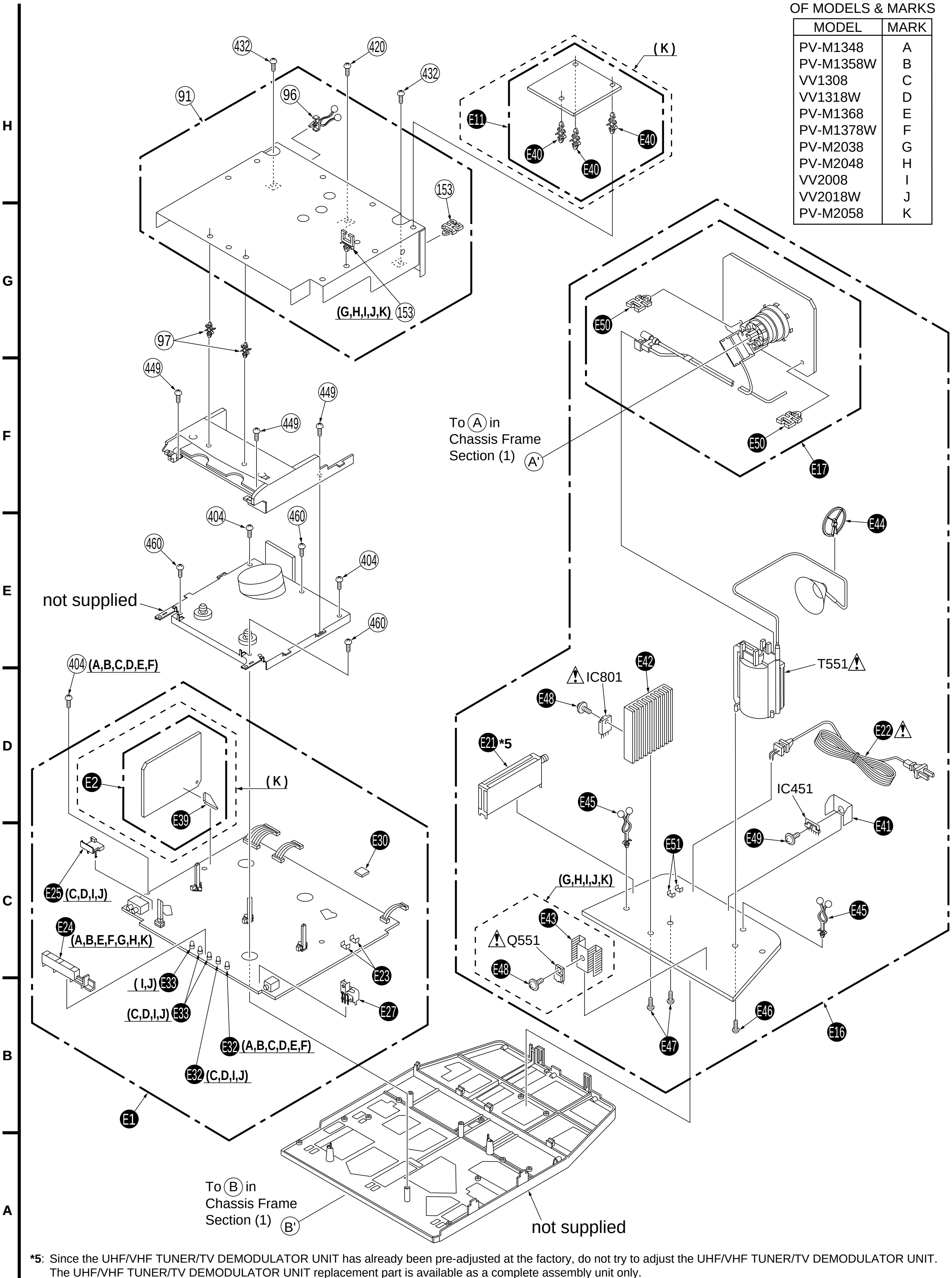


❺ CHASSIS FRAME SECTION (2)

IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K

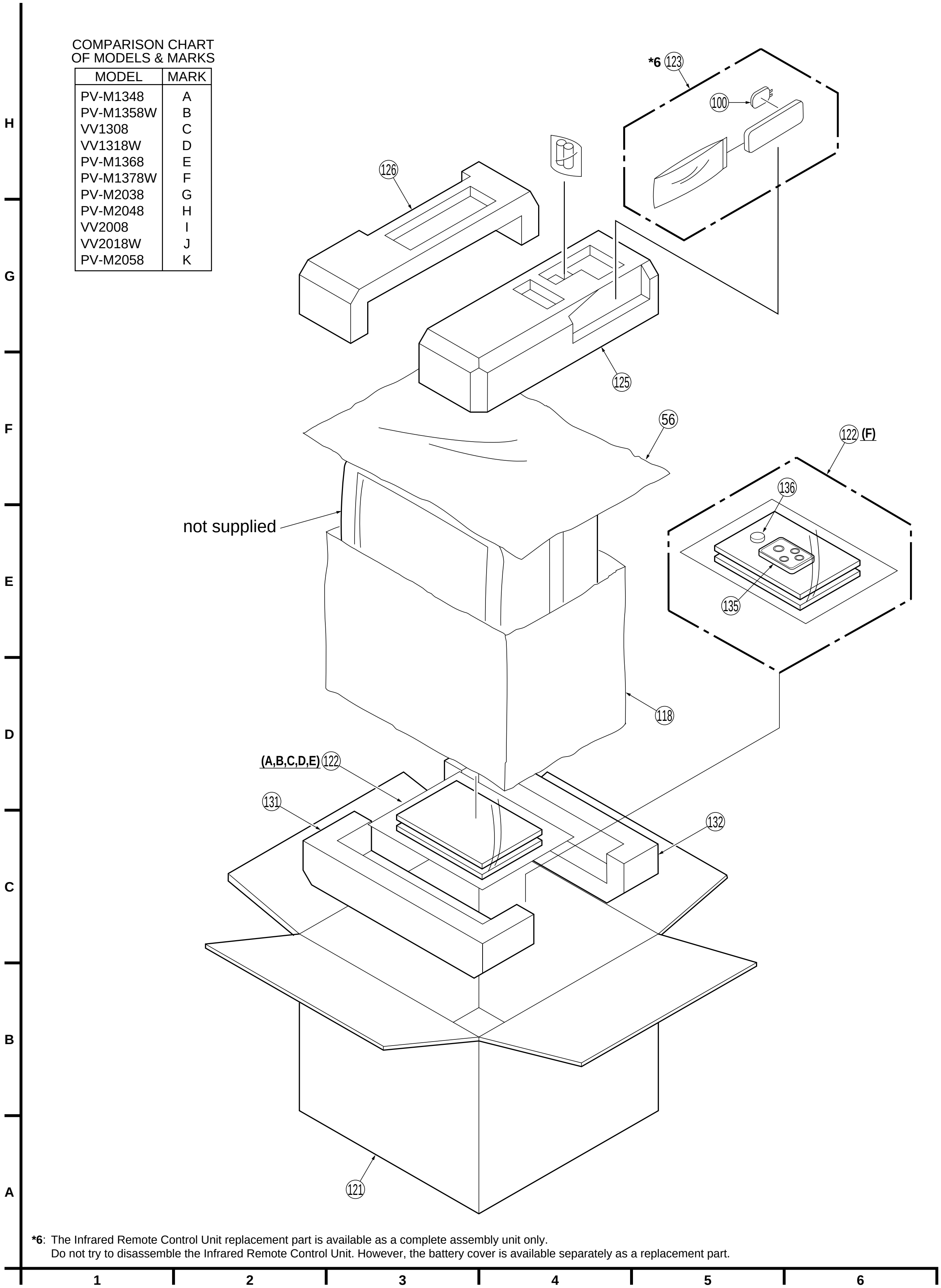


***5**: Since the UHF/VHF TUNER/TV DEMODULATOR UNIT has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/VHF TUNER/TV DEMODULATOR UNIT replacement part is available as a complete assembly unit only.

❻ PACKING PARTS AND ACCESSORIES SECTION (A,B,C,D,E,F)

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K

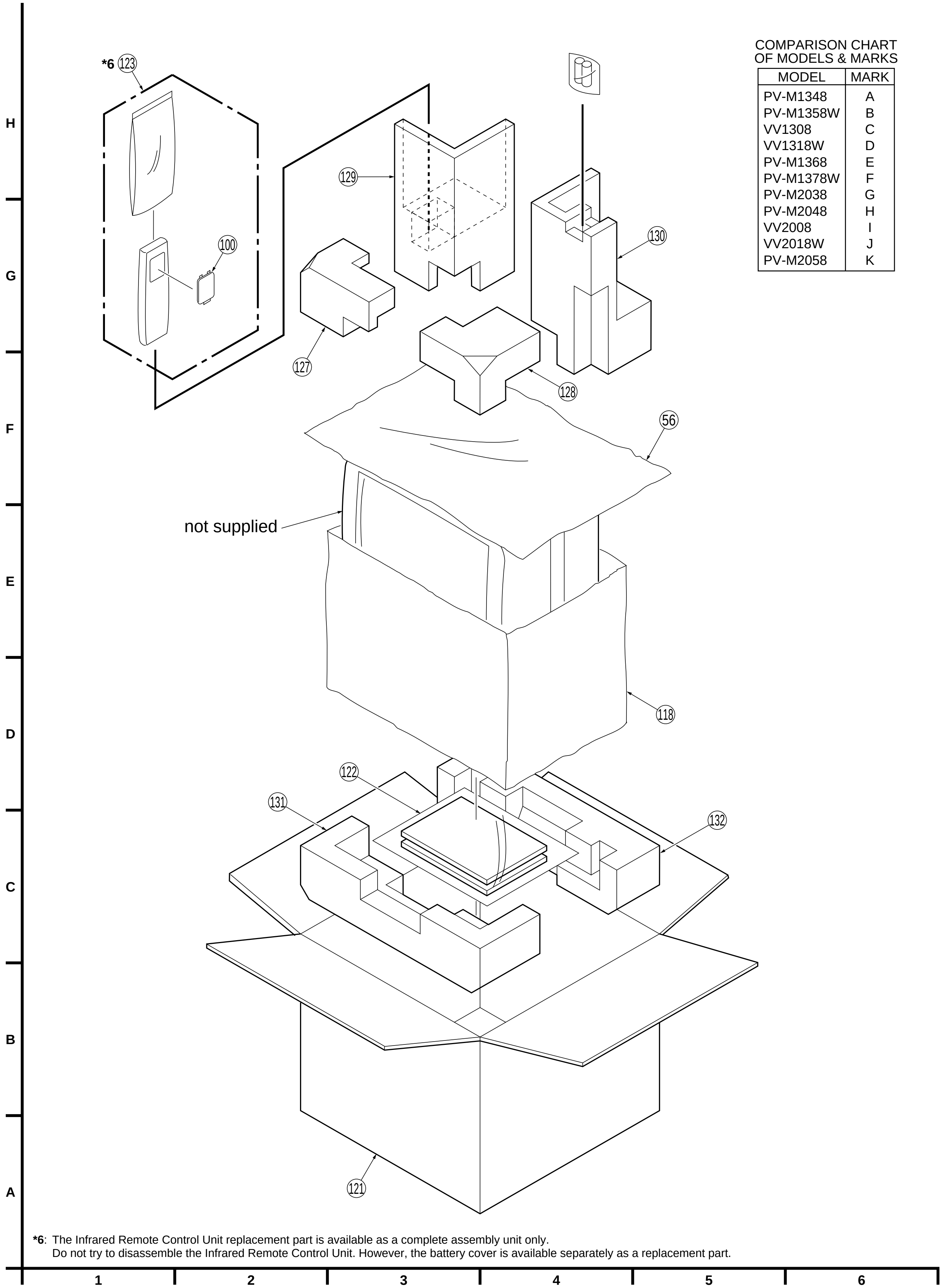


***6**: The Infrared Remote Control Unit replacement part is available as a complete assembly unit only.
Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.

❻ PACKING PARTS AND ACCESSORIES SECTION (G,H,I,J,K)

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K



***6**: The Infrared Remote Control Unit replacement part is available as a complete assembly unit only.
Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.

REPLACEMENT PARTS LISTS

BEFORE REPLACING PARTS, READ THE FOLLOWING:

1. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list.
2. **IMPORTANT SAFETY NOTICE**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.
3. SPECIAL NOTE
   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.
4. Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
5. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.
6. The parts which "AKEI" is indicated in Remarks column will be supplied from AKEI factory.

Mechanical Replacement Notes

1. Section No. of parts shown in Exploded Views are indicated in the Remarks column.
2. Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as Capstan Rotor Kit (Ref No. 51) only.
3. Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit (Ref No. 52) only. However, IC2501 (AN3845SC) is available separately as a replacement part. When installing the IC2501 or Capstan Stator unit, be sure to apply Silicon Grease (VFK1301). Refer to "Capstan Stator Unit" of "DISASSEMBLY/ASSEMBLY PROCEDURES OF MECHANISM" section.
4. Since the UHF/VHF TUNER/TV DEMODULATOR UNIT (Ref No. E21) has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/VHF TUNER/TV DEMODULATOR UNIT replacement part is available as a complete assembly unit only.
5. The Infrared Remote Control Unit (Ref No. 123) replacement part is available as a complete assembly unit only. Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.
6. Cut Washers (Ref No. 416 and 417) are not reusable.
   If removed, install a new one.
7. Main Cam Push Nut (Ref No. 414) is not reusable.
   If removed, install a new one.

Electrical Replacement Notes

1. Item numbers with capital letter E (Example: E1, E2,...) in the Ref. No. column are shown in the exploded views. The E item numbers are also printed on the same page at the top of the column.
2. The parts with "■" mark are supplied individually or as a unit. The parts with "▲" mark are supplied individually or as a unit, and are included in "■" parts listed directly above in the parts list.
3. Unless otherwise specified;
   All resistors are in ohms, 1/4W, +/-5%, carbon,
   K = 1,000 ohm, M = 1,000 kohm.
   All capacitors are in microfarads, P = micromicrofarad, +/-10%.
   All coils are in microhenries, M = 1,000 microhenry, +/-10%.
4. Abbreviation
   RTL: Retention Time Limited
   This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.
   NR: Non Repairable Board Ass'y
   MGF CHIP: Metal Glaze Film Chip
   C CHIP: Ceramic Chip
   COMPLX CMP: Complex Component
   W FLMPRF: Wirewound Flameproof
   C.B.A.: Circuit Board Assembly
   P.C.B.: Printed Circuit Board
   E.S.D.: Electrostatically Sensitive Devices
5. SERVICE OF CHIP PARTS
   When servicing chip parts, please use a soldering iron of less than 30 watts. Refer to "IC, TRANSISTOR AND CHIP PART INFORMATION" page.
6. The parts with "●" are 0 ohm resistor. When replacing, a wire can be substituted for a 0 ohm resistor.
7. IC6001 replacement note:
   The manufacturing part number is UPD784927YGF-101. However, to order the part, use service order part number D784927YG101.

COMPARISON CHART OF MODELS & MARKS

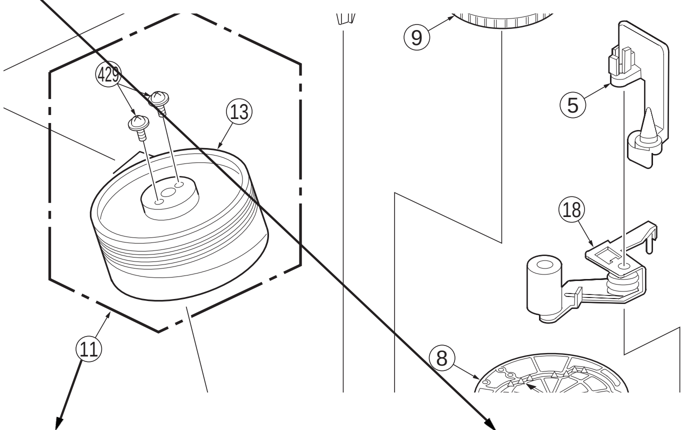
MODEL	MARK
PV-M1348	A
PV-M1358W	B
VV1308	C
VV1318W	D
PV-M1368	E
PV-M1378W	F
PV-M2038	G
PV-M2048	H
VV2008	I
VV2018W	J
PV-M2058	K

MECHANICAL REPLACEMENT PARTS LIST

<The complete Exploded Views are shown in this manual.>

EXPLODED VIEWS

❶ MECHANISM (TOP) SECTION



Ref. No.	Part No.	Part Name	Remarks
		MECHANISM PARTS ON CHASSIS	
			(Section No.)
1	VBSS0032	FULL ERASE HEAD	1
2	VXKS0867	MOTOR BLOCK ASS'Y	1
	OR VXKS0876		
3	VDBS0349	TENSION ARM BOSS	1
4	VDBS0351	S BRAKE ARM BOSS	1
5	VMDS0971	OPENER PIECE	1
6	VDGS0428	WORM WHEEL GEAR	1
7	VDGS0429	INTERMEDIATE GEAR	1
8	VDGS0430	MAIN CAM GEAR	1
9	VDRS0056	S REEL TABLE	1
10	VDRS0057	T REEL TABLE	1
11		CYLINDER UNIT	
	VEGS0395	(A,B,C,D,G,H,I,J)	1
	VEGS0397	(E,F,K)	1
12	VEHS0559	AUDIO CONTROL HEAD UNIT	1 AKEI
13		UPPER CYLINDER UNIT	
	VEHS0560	(A,B,C,D,G,H,I,J)	1
	OR VEHS0553		
	VEHS0561	(E,F,K)	1
	OR VEHS0554		
14	VJSS0882	CONNECTOR 8P	1
15	VJWS6LB100LL	COMMU CABLE W/OUT PLUG	1
16	VXDS0198	LOADING POST BASE-S UNIT	1
17	VXDS0195	LOADING POST BASE-T UNIT	1
18	VXLS1078	PINCH ARM UNIT	1
19	VMLS0978	MAIN LEVER DRIVE ARM	1
20	VXLS1063	P5 ARM UNIT	1
21	VMLS0976	DRIVE RACK ARM	1
22	VMLS0972	CHANGING LEVER A	1
23	VMLS0977	MAIN LEVER	1
24	VXLS1072	LOADING RACK UNIT	1
25	VXLS1061	S BRAKE ARM UNIT	1
26	VMLS0982	S SPRING ARM	1
27	VXLS1062	T BRAKE UNIT	1
28	VMBS1150	T BRAKE SPRING	1
29	VXLS1074	TENSION ARM UNIT	1
30	VMBS1164	TENSION SPRING	1
31	VMCS0078	PCB PLATE	1
32		CLEANER ARM UNIT	
	VXLS1080	(G)	1
33		CLEANER ROLLER	
	VDPS0269	(G)	1
38	TES7612	CASSETTE DOOR SPRING	4
41	VXPS0379	CENTER CLUTCH UNIT	2
42	VMBS1151	CHANGING GEAR SPRING	2
43	VDGS0425	CHANGING GEAR	2
44	VXLS1053	IDLER ARM UNIT	2
45	VMDS0985	PCB HOLDER	2

Ref. No.	Part No.	Part Name	Remarks
46	VMDS0982	MAIN LEVER GUIDE	2
47	VMLS0973	CHANGING LEVER B	2
48		COLOR PICTURE TUBE SUB UNIT	
	LXQVB2138P	(A,B,E,F)	4
	LXQVB2138S	(C,D)	4 AKEI
	TXFVB02206	(G,H,K)	4 AKEI
	LXQVB2207Q	(I,J)	4 AKEI
49	VXLS1054	S LOADING ARM UNIT	2
50	VXLS1056	T LOADING ARM UNIT	2
51	VXPS0382K2	CAPSTAN ROTOR KIT	2
52	VEMS0316K2	CAPSTAN STATOR KIT	2
53	VBKS0040	FG HEAD	2
54	VDVS0087	CAPSTAN BELT SQUARE,ELASTOMER	2
		2MM	
55	VMAS2135	SUB ROTOR	2
56		SHEET,POLYETHYLENE	
	TPE794012	(A,B,C,D,E,F)	6 AKEI
	TPE794011	(G,H,I,J,K)	6 AKEI
57	VXBS0061	GROUNDING PLATE UNIT	2
58	VXLS1070	SS BRAKE ARM UNIT	2
59	VMBS1155	SS BRAKE SPRING	2
61	VXYS1172	CASSETTE UP ASS'Y	3
62	VMAS2131	TOP PLATE	3
63	VMBS1159	GROUNDING SPRING	3
64	VMDS0976	SIDE PLATE L	3
65	VMDS0974	SIDE PLATE R	3
66	VMDS0979	SENSOR COVER	3
67	VMLS0987	OPENER LEVER	3
68	VXLS1064	DRIVE RACK UNIT	3
69	VXAS4404	HOLDER UNIT	3
70	VXLS1065	WIPER ARM UNIT	3
71		FRONT CABINET ASS'Y	
	LXQKY2138P	(A)	4 AKEI
	LXQKY2138PW	(B)	4 AKEI
	LXQKY1138Q	(C)	4 AKEI
	LXQKY1138QW	(D)	4 AKEI
	LXQKY1138GP	(E)	4 AKEI
	LXQKY1138GPW	(F)	4 AKEI
	LXQKY1208P	(G)	4 AKEI
	LXQKY2208P	(H)	4 AKEI
	LXQKY2208Q	(I)	4 AKEI
	LXQKY2208QW	(J)	4 AKEI
	LXQKY2208GP	(K)	4 AKEI
72		CASSETTE DOOR-LID	
	LKK688028A	(A)	4 AKEI
	LKK688029A	(B)	4 AKEI
	LKK688010A	(C)	4 AKEI
	LKK688011A	(D)	4 AKEI
	LKK688026A	(E)	4 AKEI
	LKK688027A	(F)	4 AKEI
	LKK688023A	(G,H)	4 AKEI
	LKK688004A	(I)	4 AKEI
	LKK688006A	(J)	4 AKEI
	LKK688024A	(K)	4 AKEI
73		REAR COVER UNIT	
	LXQKV1138GP	(A,C,E)	4 AKEI
	LXQKV1138GPW	(B,D,F)	4 AKEI
	LXQKV1208GP	(H,K)	4 AKEI
		REAR COVER	
	LKV60401A	(G,I)	4 AKEI
	LKV60404A	(J)	4 AKEI
74		REAR COVER PIECE	
	TKK778575	(A,B,C,D,E,F)	4 AKEI
81		POWER BUTTON	
	LBX61023A	(A,E)	4 AKEI
	LBX61031A	(B,F)	4 AKEI
	LBX61009A	(C)	4 AKEI
	LBX61027A	(D)	4 AKEI
	LBX61001A	(G,H,K)	4 AKEI
	LBX61005A	(I)	4 AKEI
	LBX61017A	(J)	4 AKEI
82		CH VOL BUTTON	
	LBX61025A	(A,E)	4 AKEI
	LBX61033A	(B,F)	4 AKEI
	LBX61010A	(C)	4 AKEI
	LBX61028A	(D)	4 AKEI
	LBX61003A	(G,H,K)	4 AKEI
	LBX61006A	(I)	4 AKEI
	LBX61018A	(J)	4 AKEI

Ref. No.	Part No.	Part Name	Remarks
83		VCR BUTTON	
	LBX61026A	(A,E)	4 AKEI
	LBX61034A	(B,F)	4 AKEI
	LBX61011A	(C)	4 AKEI
	LBX61029A	(D)	4 AKEI
	LBX61004A	(G,H,K)	4 AKEI
	LBX61007A	(I)	4 AKEI
	LBX61019A	(J)	4 AKEI
84		OPERATION BUTTON UNIT	
	LXQBX1137GP	(A,E)	4 AKEI
	LXQBX2137GP	(B,F)	4 AKEI
	LXQBX1137Q	(C)	4 AKEI
	LXQBX1137QW	(D)	4 AKEI
	LXQBX1207P	(G,H,K)	4 AKEI
	LXQBX1207Q	(I)	4 AKEI
	LXQBX1207QW	(J)	4 AKEI
90		BADGE,ABS RESIN	
	TBM153023	(A,B,E,F)	4 AKEI
	TBM153022	(G,H,K)	4 AKEI
91		TOP SHIELD PLATE ASS'Y	
	LXQUS1138GP	(A,B,C,D,E,F)	5 AKEI
	LXQUS1208GP	(G,H,I,J,K)	5 AKEI
92	LASUSP5904A	SPEAKER	4 AKEI
93	VEKS5534	SPEAKER CORD W/PLUG	4 AKEI
94		DEFLECTION YOKE	
	TLY26333F5	(A,B,E,F)	⚠ 4 AKEI
	OR TLY26391S2		⚠ AKEI
	LLY6307K	(C,D)	⚠ 4 AKEI
	LLY6308F	(G,H,K)	⚠ 4 AKEI
	OR LLY6308S		⚠ AKEI
	LLY6309F	(I,J)	⚠ 4 AKEI
	OR LLY6309S		⚠ AKEI
95		CONVERGENCE MAGNET	
	LLL62001	(A,B,C,D,E,F,I,J)	4 AKEI
96	LML69002A	CLAMPER	5 AKEI
97	VMXS0869	DOUBLE LOCKING SPACER	5 AKEI
100		BATTERY COVER	
	VKFS2221	(A,C,E,G,H,I,K)	6
	VKFS2223	(B,D,F,J)	6 AKEI
117		CUSHION,POLYURETHANE	
	TMK76739	(A,B,C,D,E,F)	4
118		BAG,POLYETHYLENE	
	TPE744031	(A,B,C,D,E,F)	6 AKEI
	TPE744035	(G,H,I,J,K)	6 AKEI
119	LMH65001A	DY ADJUSTMENT RUBBER	4 AKEI
121		PACKING CASE,PAPER	
	LPH610115A	(A)	6 AKEI
	LPH610116A	(B)	6 AKEI
	LPH610117A	(C)	6 AKEI
	LPH610118A	(D)	6 AKEI
	LPH610119A	(E)	6 AKEI
	LPH610120A	(F)	6 AKEI
	LPH640116A	(G)	6 AKEI
	LPH640112A	(H)	6 AKEI
	LPH640114A	(I)	6 AKEI
	LPH640115A	(J)	6 AKEI
	LPH640113A	(K)	6 AKEI
122		FAN BAG	
	VQFS3410	(A,B,E,G)	6 AKEI
	VQFS3419	(C,D,I,J)	6 AKEI
	VQFS3436	(F)	6 AKEI
	VQFS3411	(H,K)	6 AKEI
123		INFRARED REMOTE CONTROL UNIT	
	VSQS1563	(A,E,G,H)	6 AKEI
	VSQS1574	(B)	6 AKEI
	VSQS1570	(C,I)	6 AKEI
	VSQS1571	(D,J)	6 AKEI
	VSQS1567	(F)	6 AKEI
	VSQS1564	(K)	6 AKEI
125		TOP CUSHION RIGHT,STYROFOAM	
	LPJ61005A	(A,B,C,D,E,F)	6 AKEI
126		TOP CUSHION LEFT,STYROFOAM	
	LPJ61006A	(A,B,C,D,E,F)	6 AKEI
127		TOP CUSHION FRONT-L,STYROFOAM	
	LPJ61023A	(G,H,I,J,K)	6 AKEI
128		TOP CUSHION FRONT-R,STYROFOAM	
	LPJ61024A	(G,H,I,J,K)	6 AKEI

Ref. No.	Part No.	Part Name	Remarks
129		TOP CUSHION REAR-L,STYROFOAM	
	LPJ61025A	(G,H,I,J,K)	6 AKEI
130		TOP CUSHION REAR-R,STYROFOAM	
	LPJ61026A	(G,H,I,J,K)	6 AKEI
131		BOTTOM CUSHION FRONT,STYROFOAM	
	LPJ62005A	(A,B,C,D,E,F)	6 AKEI
	LPJ62023A	(G,H,I,J,K)	6 AKEI
132		BOTTOM CUSHION REAR,STYROFOAM	
	LPJ62006A	(A,B,C,D,E,F)	6 AKEI
	LPJ62024A	(G,H,I,J,K)	6 AKEI
135		INFRARED REMOTE CONTROL UNIT	
		FOR KITCHEN TIMER	
	VSQS1572	(F)	6
136		BATTERY UNIT	
	VSBW0004	(F)	6
153	TMM77412	CLAMPER	5 AKEI
169		PERMALLOY MAGNETIC STRIP	
	TSM10032-2	(G,H,I,J,K)	4 AKEI
		SCREWS AND WASHERS	
401	VHDS0475	SCREW,STEEL	1
404	VHDS0472	SCREW,STEEL	5
407	XYN26+C5	SCREW W/WASHER,STEEL	2
408	XYN2+J5FZ	SCREW W/WASHER,STEEL	2
410	VHDS0498	SCREW W/WASHER,STEEL	1
414	VHNS0070	MAIN CAM PUSH NUT,STEEL	1
416	VMXS0922	CUT WASHER,NYLON	2
417	VMXS0924	CUT WASHER,NYLON	1
420	XYC3+FG10FR	SCREW W/WASHER,STEEL	5
424	XYC26+SF6J	SCREW W/WASHER,STEEL	1
429	VHDS0491	SCREW W/WASHER,STEEL	1
430	XTV26+6FFZJ	TAPPING SCREW,STEEL	2
431	XTV26+6FJ	TAPPING SCREW,STEEL	1,2
432	XTV3+8JR	TAPPING SCREW,STEEL	5
435	XSN26+4	SCREW,STEEL	2
443	XTV4+12A	TAPPING SCREW,STEEL	4
445	THE492-4	SCREW W/WASHER,STEEL	4
446	XTV4+16A	TAPPING SCREW,STEEL	4 AKEI
449	VHDS0493	TAPPING SCREW,STEEL	5
460	XTN4+12A	TAPPING SCREW,STEEL	5
		SERVICE FIXTURES AND TOOLS	
	VFMS0003H6	VHS ALIGNMENT TAPE	
	VFKS0009	REEL TABLE HEIGHT FIXTURE	
	VFKS0010	POST ADJUSTMENT PLATE	
	VFKS0081	GREASE	
	VFK0329	POST ADJUSTMENT DRIVER	
	VFK1301	SILICON GREASE	
	VFK27	HEAD CLEANING STICK	
	VFK0330	H-POSITION ADJUSTMENT DRIVER	
	TSM10032-2	PERMALLOY MAGNETIC STRIP	
	VUZS0002	EXTENSION CABLE KIT	
	VUVS0001	MODE SELECT SW ASS'Y	
	VUVS0002	EXTENSION CABLE -1	
	VUVS0003	EXTENSION CABLE -2	
		(FOR Hi-Fi MODEL)	
	VUVS0004	EXTENSION CABLE -2	
		(FOR 4 HEAD MODEL)	
	VUVS0005	EXTENSION CABLE -2	
		(FOR 2 HEAD MODEL)	

ELECTRICAL REPLACEMENT PARTS LIST

(E1, E2, E6, E7, E11, E16, E17)

Ref. No.	Part No.	Part Name	Remarks
		PRINTED CIRCUIT BOARD ASSEMBLY	
E1	VEPS3055F	MAIN C.B.A.	■ E.S.D. RTL AKEI
	(A,B)		
E1	VEPS3058B	MAIN C.B.A.	■ E.S.D. RTL AKEI
	(C,D)		
E1	VEPS3055D	MAIN C.B.A.	■ E.S.D. RTL AKEI
	(E)		
E1	VEPS3055E	MAIN C.B.A.	■ E.S.D. RTL AKEI
	(F)		
E1	VEPS3055G	MAIN C.B.A.	■ E.S.D. RTL AKEI
	(G)		
E1	VEPS3055B	MAIN C.B.A.	■ E.S.D. RTL AKEI
	(H)		
E1	VEPS3058A	MAIN C.B.A.	■ E.S.D. RTL AKEI
	(I,J)		
E1	VEPS3055A	MAIN C.B.A.	■ E.S.D. RTL AKEI
	(K)		
E2	VEPS4022A	TV STEREO C.B.A.	▲ E.S.D. RTL AKEI
	(K)		
E6	VEPS5012Z1	HEAD AMP C.B.A.	■ RTL AKEI
	(A,B,C,D,G,H,I,J)		
E6	VEPS5011Z1	HEAD AMP C.B.A.	■ RTL AKEI
	(E,F,K)		
E7	VEPS0A25A	JUNCTION C.B.A.	■ RTL
E11	VEPS4014D	STEREO AMP C.B.A.	■ RTL AKEI
	(K)		
E16	LRM61006Z	TV MAIN C.B.A.	■ RTL AKEI
	(A,E)		
E16	LRM61006W	TV MAIN C.B.A.	■ RTL AKEI
	(B,F)		
E16	LRM61006X	TV MAIN C.B.A.	■ RTL AKEI
	(C)		
E16	LRM61006Y	TV MAIN C.B.A.	■ RTL AKEI
	(D)		
E16	LRM61006C	TV MAIN C.B.A.	■ RTL AKEI
	(G,H)		
E16	LRM61006D	TV MAIN C.B.A.	■ RTL AKEI
	(I)		
E16	LRM61006E	TV MAIN C.B.A.	■ RTL AKEI
	(J)		
E16	LRM61006A	TV MAIN C.B.A.	■ RTL AKEI
	(K)		
E17	LRP63001Z	CRT C.B.A.	▲ RTL AKEI
	(A,B,C,D,E,F)		
E17	LRP63002A	CRT C.B.A.	▲ RTL AKEI
	(G,H,K)		
E17	LRP63002B	CRT C.B.A.	▲ RTL AKEI
	(I,J)		
		MAIN C.B.A. (A,B,E,F,G,H,K)	■
		INTEGRATED CIRCUITS	
IC1001	0N3131-R.KT	IC, LINEAR ERROR V. DET	⚠
	OR 0N3131-S.KT	IC, LINEAR ERROR V. DET	⚠
IC3001	AN3476FBP	IC, LINEAR VIDEO/AUDIO PROCESS	
IC3201	MN3885S	IC, CCD 1H DELAY	E.S.D.
IC3301	LC8643125F90	IC, 8BIT MICROPROCESSOR	E.S.D. AKEI
IC4151	AN5265	IC, LINEAR AUDIO AMP	
	(A,B,E,F,G,H)		
IC5301	AN5367FB	IC, LINEAR Y/C SIGNAL PROCESS	AKEI
IC6001	D784927YG101	IC, 16BIT MICROPROCESSOR	E.S.D. AKEI
IC6002	CNA1801N	REEL SENSOR UNIT	
IC6003	CNA1801N	REEL SENSOR UNIT	
IC6004	24LC01B/PS1	IC, 1K EEP ROM MEMORY	E.S.D.
		TRANSISTORS	
Q1001	2SC4533LP.KT		⚠
	OR 2SC5130LF608		⚠
Q1002	2SD1458		
Q1003	2SD636(Q,R,S)		
Q1004	2SB641(Q,R,S)		
Q1005	2SB641(R,S)		
Q1051	2SC3852		
Q1052	2SC945A(TP)		AKEI
Q1053	2SD1994(TR)		AKEI
	(K)		
Q1054	2SB709A(Q,R,S)	CHIP	
	(K)		
Q1055	2SD601A(Q,R,S)	CHIP	
	(K)		
Q3001	2SB709(R,S)	CHIP	
Q3002	2SD601(R,S)	CHIP	
Q3310	2SD601(R,S)	CHIP	
Q3311	2SB709(R,S)	CHIP	
Q3314	IMX1	COMPLX CMP SI NPN CHIP	
Q3315	UN2112	CHIP	
Q4001	2SB709(R,S)	CHIP	
Q4002	2SD601A(R,S)	CHIP	
Q4003	2SD601A(R,S)	CHIP	
Q4005	UN2215(R)		
Q4006	UN2115	CHIP	
Q4101	2SC945A(TP)		AKEI
Q4154	UN2212	CHIP	
Q5301	2SD601(R,S)	CHIP	
Q5302	2SD601(R,S)	CHIP	
Q5303	2SD601(R,S)	CHIP	
Q5601	2SD601(R,S)	CHIP	
Q5901	2SD2259		
Q6002	2SB709(R,S)	CHIP	
Q6003	2SD601(R,S)	CHIP	
Q6004	2SB709(R,S)	CHIP	
Q6005	2SD601(R,S)	CHIP	
Q6006	UN211L	CHIP	
Q6007	2SD601(R,S)	CHIP	
Q6009	VEKS5522	PHOTO SENSOR UNIT	
Q6010	VEKS5522	PHOTO SENSOR UNIT	
		DIODES	
D1001	S1WBA40		⚠
	OR S1WBA60		⚠
	OR S1WBA60B		⚠
D1002	ERA18-04		
D1003	ERA18-04		
D1005	ERA18-04		
D1006	RU2YXLFC1		
D1007	ERA18-04		
D1008	EK13		
D1011	MA4051NH	ZENER 5.1V	
D1012	MA858		
D1013	MA165		
D1015	RD18FB	ZENER 18V	⚠
D1016	MA165		
D1051	MA4100N	ZENER 10V	
D1052	MA165		
D1053	MA165		
D1054	HZ30-3TD	ZENER 30V	
D1056	MA4056-M	ZENER 5.6V	
	(K)		
D3301	MA372J	CHIP	AKEI
D3302	MA165		
D4152	MA4120-M	ZENER 12V	
	(A,B,E,F,G,H)		
D4155	MA4056-M	ZENER 5.6V	
	(A,B,E,F,G,H)		
D4591	RD9.1EW	ZENER 9.1V	
D5304	MA165		
D5501	MA4062-L	ZENER 6.2V	
D5502	MA165		
D5503	MA165		
D5504	MA165		
D5505	MA165		
D5601	MA165		
D6001	VEKS5521	SENSOR LED UNIT	
D6002	MA165		
D6201	MA165		

Ref. No.	Part No.	Part Name	Remarks
D6202	MA165		
D6302	LN31GCPHLMU	LED GREEN	
D6303	LN21RCPHLMV	LED RED	
	(A,B,E,F)		
D6304	LN31GCPHLMU	LED GREEN	
	(A,B,E,F)		
	LN21RCPHLMV	LED RED	
	(G,H,K)		
D6305	LN41YCPHLM	LED YELLOW	
	(A,B,E,F)		
	LN31GCPHLMU	LED GREEN	
	(G,H,K)		
D6306	LN41YCPHLM	LED YELLOW	
	(G,H,K)		
		RESISTORS	
R1003	VRESE2TJ334	1/2W 330K	
R1004	ERG2SJ333H	METAL OXIDE 2W 33K	
R1005	ERG1SJ560P	METAL OXIDE 1W 56	
R1006	ERDS2TJ222	2.2K	
R1007	ERDS2TJ101	100	
R1008	ERDS2TJ392	3.9K	
R1010	ERD25FJ100P	10	⚠
	OR ERD25FPJ100P	10	⚠
	OR VRESF4FJ100P	10	⚠
R1011	ERD25FJ4R7P	4.7	⚠
	OR ERD25FPJ4R7P	4.7	⚠
	OR VRESF4FJ4R7P	4.7	⚠
R1014	ERDS2TJ221	220	
R1015	ERDS2TJ221	220	
R1016	ERDS2TJ562	5.6K	
R1017	ERDS2TJ103	10K	
R1018	ERDS2TJ183	18K	
R1019	ERDS2TJ392	3.9K	
R1020	ERDS2TJ682	6.8K	
R1022	ERDS2TJ221	220	
R1051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R1052	ERDS2TJ153	15K	
R1053	ERDS2TJ153	15K	
R1057	ERDS2TJ182	1.8K	
R1060	ERDS2TJ391	390	
	(K)		
R1061	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
	(K)		
R1062	ERDS2TJ154	150K	
	(K)		
R1063	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
	(K)		
R1064	ERDS2TJ272	2.7K	
	(K)		
R1065	ERDS2TJ272	2.7K	
	(K)		
R1066	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
	(K)		
R3001	ERDS2TJ221	220	
R3004	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(A,B,G,H)		
R3005	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(A,B,G,H)		
R3006	ERDS2TJ221	220	
R3010	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3012	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3013	ERDS2TJ221	220	
R3014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
	(A,B,G,H)		
R3015	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(A,B,G,H)		
R3016	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3024	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R3025	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3026	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3028	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R3029	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R3032	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3034	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3035	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3036	ERJ6GEYG102V	MGF CHIP +-2% 1/10W 1K	

Ref. No.	Part No.	Part Name	Remarks
R3037	ERJ6GEYG102V	MGF CHIP +-2% 1/10W 1K	
R3038	ERDS2TJ222	2.2K	
R3039	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
	(A,B,G,H)		
R3040	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(A,B,G,H)		
R3042	ERDS2TJ103	10K	
R3043	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
	(A,B,G,H)		
R3044	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
	(A,B,G,H)		
R3045	ERDS2TJ182	1.8K	
	(A,B,G,H)		
R3046	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
	(A,B,G,H)		
R3077	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3081	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3082	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3083	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R3084	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3085	ERJ6GEYJ181V	MGF CHIP 1/10W 180	
R3091	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3301	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3304	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3305	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3308	ERDS2TJ102	1K	
	(K)		
R3309	ERDS2TJ102	1K	
	(K)		
R3310	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3311	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3312	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3321	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3325	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3326	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3329	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3330	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3331	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3336	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3338	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(A,B,E,F,G,H)		
	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
	(K)		
R3345	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3354	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R3361	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3362	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R3363	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3365	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3366	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R3369	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R3370	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3372	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3375	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3377	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R3378	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3379	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R3380	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R3381	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3390	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERDS2TJ222	2.2K	
R4008	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4009	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4010	ERDS2TJ473	47K	
R4011	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4013	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	

Ref. No.	Part No.	Part Name	Remarks
R4018	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
	(A,B,E,F,G,H)		
	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
	(K)		
R4021	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
	(A,B,E,F,G,H)		
	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
	(K)		
R4030	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
	(A,B,E,F,G,H)		
R4031	ERDS2TJ561	560	
R4033	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4101	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R4102	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4151	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
	(A,B,E,F,G,H)		
	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(K)		
R4152	ERDS2TJ221	220	
	(A,B,E,F,G,H)		
R4153	ERJ6GEYJ823V	MGF CHIP 1/10W 82K	
	(A,B,E,F,G,H)		
R4155	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(A,B,E,F,G,H)		
R4157	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(A,B,E,F,G,H)		
R4158	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(A,B,E,F,G,H)		
R4159	ERDS2TJ100	10	
	(A,B,E,F,G,H)		
R4160	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
	(A,B,E,F)		
	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
	(G,H)		
R4163	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
	(A,B,E,F,G,H)		
R4167	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(A,B,E,F,G,H)		
R4168	ERQ1ABJP8R2S	FUSE 1W 8.2	⚠
	(A,B,E,F,G,H)		
R4171	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
	(A,B,E,F,G,H)		
	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(K)		
R4593	ERDS2TJ681	680	
	(A,B,E,F,G,H)		
	ERDS2TJ821	820	
	(K)		
R4594	ERDS2TJ681	680	
R4595	ERDS2TJ681	680	
R4596	ERDS2TJ681	680	
	(A,B,E,F,G,H)		
	ERDS2TJ821	820	
	(K)		
R5301	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5302	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5303	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5304	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R5305	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R5306	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5307	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R5308	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R5309	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R5311	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5312	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5313	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5314	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5315	ERDS2TJ101	100	
R5316	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5317	ERDS2TJ101	100	
R5318	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R5320	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5321	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5322	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5323	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R5401	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5402	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	

Ref. No.	Part No.	Part Name	Remarks
R5403	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5405	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5406	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5501	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R5502	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R5503	ERDS2TJ471	470	
R5504	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5505	ERJ6ENF3241V	MGF CHIP +-1% 1/10W 3.24K	⚠ AKEI
R5508	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5510	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5511	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5512	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R5513	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5601	ERDS2TJ562	5.6K	
R5604	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R5610	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5611	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5612	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5613	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5901	ERQ12AJ270P	FUSE 1/2W 27	⚠ AKEI
R5902	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5931	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5932	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5933	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6001	ERDS2TJ561	560	
R6002	ERDS2TJ561	560	
R6003	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6004	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6005	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6006	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R6007	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6008	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6009	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6010	ERDS2TJ560	56	
R6012	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6013	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6016	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R6017	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6018	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6019	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6020	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6021	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6023	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6025	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6026	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
	(K)		
R6027	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6028	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6029	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6030	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(E,F,K)		
R6031	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(E,F,K)		
R6032	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6033	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6034	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6035	ERDS2TJ221	220	
R6036	ERDS2TJ221	220	
R6038	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(K)		
R6040	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6042	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6047	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6049	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6051	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6057	ERDS2TJ272	2.7K	
R6060	ERDS2TJ563	56K	
R6061	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6063	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6064	ERDS2TJ243	24K	
R6065	ERDS2TJ333	33K	
R6066	ERDS2TJ103	10K	
R6067	ERDS2TJ103	10K	
R6068	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6069	ERDS2TJ103	10K	
R6070	ERDS2TJ103	10K	
R6071	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	

Ref. No.	Part No.	Part Name	Remarks
R6072	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6073	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6074	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6075	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6076	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6077	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6078	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6081	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6082	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(A,B,E,F,G,H)		
R6083	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(K)		
R6084	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(H,K)		
R6085	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(A,B,E,F,G)		
R6086	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6087	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6092	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
	(A,B,G,H)		
R6093	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(E,F,K)		
R6095	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6096	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6097	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6098	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6102	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6103	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6104	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6105	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6106	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6107	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6108	ERDS2TJ681	680	
R6109	ERDS2TJ272	2.7K	
R6110	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6202	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6203	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6204	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R6205	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6206	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6207	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6209	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R6210	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6212	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6213	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6214	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6215	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6216	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6217	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6218	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6301	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6302	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6303	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6304	ERDS2TJ392	3.9K	
R6305	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6306	ERDS2TJ392	3.9K	
R6307	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6308	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6310	ERDS2TJ471	470	
R6311	ERDS2TJ471	470	
R6312	ERDS2TJ471	470	
R6313	ERDS2TJ471	470	
R6315	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
	(F)		
		CAPACITORS	
C1001	ECKDRS103ZV	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEKD103PZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEMD103PZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEVD103PZ	CERAMIC +80%-20% 125V 0.01	⚠ AKEI
	OR VCKSGKD103QZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSGMD103QZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTKG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTMG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUKD103MY	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSUMD103MY	CERAMIC +-20% 125V 0.01	⚠

Ref. No.	Part No.	Part Name	Remarks
C1002	ECKDRS332MED	CERAMIC +-20% 125V 3300P	⚠
	OR ECKMRS332MEY	CERAMIC +-20% 125V 3300P	⚠ AKEI
	OR VCKSEKD332MY	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSEVD332MY	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTKG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTMG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUKD332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUMD332MX	CERAMIC +-20% 125V 3300P	⚠
C1003	VCKSFKK102MX	CERAMIC +-20% 125V 1000P	⚠
	OR VCKSFMK102MX	CERAMIC +-20% 125V 1000P	⚠ AKEI
	OR VCKSFVK102MX	CERAMIC +-20% 125V 1000P	⚠ AKEI
C1004	ECEA2DU820YE	ELECTROLYTIC 200V 82	
C1005	ECEA2DG4R7	ELECTROLYTIC 200V 4.7	
C1006	ECKW2H221KB5	CERAMIC 500V 220P	
C1007	VCYSBRC104MX	CERAMIC +-20% 16V 0.1	
C1009	ECQB1H103JF	POLYESTER +-5% 50V 0.01	
C1010	ECQB1H103JF	POLYESTER +-5% 50V 0.01	
C1011	ECEA1HU4R7	ELECTROLYTIC 50V 4.7	
C1012	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1013	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1014	ECEA1HGE470	ELECTROLYTIC 50V 47	
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1017	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1018	ECQB1H104P9	POLYESTER +100%-0% 50V 0.1	
C1021	ECEA1HKG010	ELECTROLYTIC 50V 1	
C1025	ECKDRS221MB	CERAMIC +-20% 125V 220P	⚠
	OR ECKMRS221MBY	CERAMIC +-20% 125V 220P	⚠ AKEI
	OR VCKSEJD221KW	CERAMIC 125V 220P	⚠ AKEI
	OR VCKSELD221KW	CERAMIC 125V 220P	⚠ AKEI
	OR VCKSHJD221MW	CERAMIC +-20% 125V 220P	⚠
	OR VCKSHLD221MW	CERAMIC +-20% 125V 220P	⚠
	OR VCKSTJG221KW	CERAMIC 250V 220P	⚠ AKEI
	OR VCKSTLG221KW	CERAMIC 250V 220P	⚠ AKEI
	OR VCKSUJD221KW	CERAMIC 125V 220P	⚠ AKEI
	OR VCKSULD221KW	CERAMIC 125V 220P	⚠ AKEI
C1028	ECKDRS221MB	CERAMIC +-20% 125V 220P	⚠
	OR ECKMRS221MBY	CERAMIC +-20% 125V 220P	⚠ AKEI
	OR VCKSEJD221KW	CERAMIC 125V 220P	⚠ AKEI
	OR VCKSELD221KW	CERAMIC 125V 220P	⚠ AKEI
	OR VCKSHJD221MW	CERAMIC +-20% 125V 220P	⚠
	OR VCKSHLD221MW	CERAMIC +-20% 125V 220P	⚠
	OR VCKSTJG221KW	CERAMIC 250V 220P	⚠ AKEI
	OR VCKSTLG221KW	CERAMIC 250V 220P	⚠ AKEI
	OR VCKSUJD221KW	CERAMIC 125V 220P	⚠ AKEI
	OR VCKSULD221KW	CERAMIC 125V 220P	⚠ AKEI
C1030	VCYSBRE183KX	CERAMIC 25V 0.018	
C1051	ECEA1HUR47	ELECTROLYTIC 50V 0.47	
C1052	ECEA1CU100	ELECTROLYTIC 16V 10	
C1056	ECEA1CKA470	ELECTROLYTIC 16V 47	
	(K)		
C1057	ECEA1CKA101	ELECTROLYTIC 16V 100	
	(K)		
C3001	ECUV1H103KBN	C CHIP 50V 0.01	
C3006	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3007	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3008	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3009	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3013	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3015	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3016	ECEA1CKS100	ELECTROLYTIC 16V 10	
C3019	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3020	ECEA1CKA220	ELECTROLYTIC 16V 22	
C3021	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3022	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3023	ECUV1H680JCN	C CHIP +-5% 50V 68P	
C3024	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3025	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3026	ECUV1H822KBN	C CHIP 50V 8200P	
C3027	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3030	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3031	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3032	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3034	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3035	ECUV1H180JCN	C CHIP +-5% 50V 18P	
	(A,B,G,H)		
	ECUV1H390JCN	C CHIP +-5% 50V 39P	
	(E,F,K)		
C3036	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	

Ref. No.	Part No.	Part Name	Remarks
C3038	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3041	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3043	ECUV1H392KBN	C CHIP 50V 3900P	
C3044	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3045	ECEA1HKS3R3	ELECTROLYTIC 50V 3.3	
C3046	ECEA1HKS2R2	ELECTROLYTIC 50V 2.2	
C3047	ECEA0JKS101	ELECTROLYTIC 6.3V 100	
C3048	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3050	ECEA0JKS220	ELECTROLYTIC 6.3V 22	
C3053	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3054	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3055	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3056	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3057	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3058	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3060	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3081	ECUV1H102KBN	C CHIP 50V 1000P	
C3082	ECUV1H332KBN	C CHIP 50V 3300P	
C3083	ECUV1H561JCN	C CHIP +-5% 50V 560P	
C3084	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3231	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3232	ECUV1H102KBN	C CHIP 50V 1000P	
C3234	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3235	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3236	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3237	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3301	ECUV1H330JCN	C CHIP +-5% 50V 33P	
C3302	ECUV1H330JCN	C CHIP +-5% 50V 33P	
C3303	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3304	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3305	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3306	ECUV1H270JCN	C CHIP +-5% 50V 27P	
C3307	ECUV1H080CCN	C CHIP +-0.25P 50V 8P	
C3308	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3309	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3310	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3311	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3312	ECUV1H102KBN	C CHIP 50V 1000P	
C3313	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3314	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3317	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C3326	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3363	ECUV1H220JCN	C CHIP +-5% 50V 22P	
C4001	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C4002	ECEA1HKS010	ELECTROLYTIC 50V 1	
C4003	ECUV1H272KBN	C CHIP 50V 2700P	
C4004	ECUV1H103KBN	C CHIP 50V 0.01	
C4005	ECEA0JKS220	ELECTROLYTIC 6.3V 22	
C4006	ECUV1H102KBN	C CHIP 50V 1000P	
C4007	ECEA0JKS220	ELECTROLYTIC 6.3V 22	
C4008	ECEA0JKS470	ELECTROLYTIC 6.3V 47	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4010	ECUV1E333KBN	C CHIP 25V 0.033	
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4013	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4014	ECEA1HKS010	ELECTROLYTIC 50V 1	
C4018	ECUV1H103KBN	C CHIP 50V 0.01	
	(A,B,E,F,G,H)		
C4030	ECUV1E333KBN	C CHIP 25V 0.033	
C4032	ECUV1H103KBN	C CHIP 50V 0.01	
C4033	ECEA1HKS010	ELECTROLYTIC 50V 1	
C4102	ECQB1562JF	POLYESTER +-5% 200V 5600P	
C4103	ECUV1H103KBN	C CHIP 50V 0.01	
C4104	ECUV1H103KBN	C CHIP 50V 0.01	
C4105	ECEA1CKA220	ELECTROLYTIC 16V 22	
C4151	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(A,B,E,F,G,H)		
C4152	ECEA1CKA470	ELECTROLYTIC 16V 47	
	(A,B,E,F,G,H)		
C4153	ECUV1H222KBN	C CHIP 50V 2200P	
	(A,B,E,F,G,H)		
C4154	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
	(A,B,E,F,G,H)		
C4155	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
	(A,B,E,F,G,H)		
C4156	ECA1EM471B	ELECTROLYTIC 25V 470	
	(A,B,E,F,G,H)		

Ref. No.	Part No.	Part Name	Remarks
C4158	ECUV1E473ZFN	C CHIP +80%-20% 25V 0.047	
	(A,B,E,F,G,H)		
C4159	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(A,B,E,F,G,H)		
C4160	ECA1CM101B	ELECTROLYTIC 16V 100	
	(A,B,E,F,G,H)		
C4161	ECUV1E473KBN	C CHIP 25V 0.047	
	(A,B,E,F,G,H)		
C4163	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
	(A,B,E,F,G,H)		
C4164	ECUV1H103KBN	C CHIP 50V 0.01	
	(A,B,E,F,G,H)		
C4171	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5301	ECEA1CKA100	ELECTROLYTIC 16V 10	
C5302	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C5303	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C5305	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C5306	ECEA1CKA100	ELECTROLYTIC 16V 10	
C5307	ECEA1CKN100	ELECTROLYTIC 16V 10	
C5308	ECEA1CKN100	ELECTROLYTIC 16V 10	
C5401	ECEA1HKNR22	ELECTROLYTIC 50V 0.22	
C5402	ECUV1H222KBN	C CHIP 50V 2200P	
C5403	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C5501	ECUV1E183KBN	C CHIP 25V 0.018	
C5502	ECUV1H471KBN	C CHIP 50V 470P	
C5505	ECEA1CKA470	ELECTROLYTIC 16V 47	
C5506	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5507	ECEA1CKA100	ELECTROLYTIC 16V 10	
C5508	ECUV1H221JSN	C CHIP +-5% 50V 220P	AKEI
C5510	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5511	ECUV1E333KBN	C CHIP 25V 0.033	
C5516	ECUV1E333KBN	C CHIP 25V 0.033	
C5601	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5602	ECUV1E104KBN	C CHIP 25V 0.1	
C5603	ECUV1H150JCN	C CHIP +-5% 50V 15P	
C5604	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5605	ECUV1H153KBN	C CHIP 50V 0.015	
C5607	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5902	ECEA1CKA470	ELECTROLYTIC 16V 47	
C5903	ECEA1CKA470	ELECTROLYTIC 16V 47	
C5904	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5905	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C5906	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5931	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5932	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C6001	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
C6004	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6005	ECUV1H103KBN	C CHIP 50V 0.01	
C6009	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6011	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6012	ECUV1H180JCN	C CHIP +-5% 50V 18P	
C6013	ECUV1H150GCN	C CHIP +-2% 50V 15P	
C6014	ECUV1H020CCN	C CHIP +-0.25P 50V 2P	
C6015	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6016	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6017	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6018	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6019	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6022	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6029	ECUV1H102KBN	C CHIP 50V 1000P	
C6030	ECUV1H102KBN	C CHIP 50V 1000P	
C6034	ECEA1CKA100	ELECTROLYTIC 16V 10	
C6201	ECUV1H102KBN	C CHIP 50V 1000P	
C6203	ECUV1H103KBN	C CHIP 50V 0.01	
C6206	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6207	ECUV1H151KN	C CHIP 50V 150P	
C6208	ECUV1E104KBN	C CHIP 25V 0.1	
C6209	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6211	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6212	ECUV1H100DCN	C CHIP +-0.5P 50V 10P	
C6213	ECUV1H272KBN	C CHIP 50V 2700P	
C6214	ECUV1H102KBN	C CHIP 50V 1000P	
C6215	ECEA1HKA010	ELECTROLYTIC 50V 1	
C6216	ECUV1H272KBN	C CHIP 50V 2700P	
C6218	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6219	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	

Ref. No.	Part No.	Part Name	Remarks
		FILTERS	
FL4001	VLFS0014		
		COILS	
L1001	ELF15N005A	LINE FILTER 0.5A 18M	⚠
	OR ELF18D290A	LINE FILTER 0.5A 18M	⚠
	OR LLN23012A	LINE FILTER 0.5A 18M	⚠
	OR VLQS0157	LINE FILTER 0.5A 18M	⚠
	OR VLQS0166	LINE FILTER 0.5A 18M	⚠
	OR VLQS0167	LINE FILTER 0.5A 18M	⚠
	OR VLQS0168	LINE FILTER 0.5A 18M	⚠ AKEI
L1002	VLQSW07D220M	+-20% 22	
L1003	VLQSW07D9R0M	+-20% 9	
L1006	VLPS0005A	BEAD INDUCTOR	
L3002	ELESN101KA	100	
L3005	VLQSH02R330K	33	
L3010	ELESN470KA	47	
L3231	ELESN221KA	220	
L3301	VLQSH02R5R6J	+-5% 5.6	AKEI
L3302	ELESN101KA	100	
L4002	VLQSH02R101K	100	
L4004	VLQSH02R120K	12	
	(A,B,E,F)		
	VLQSH02R100K	10	
	(G,H,K)		
L4005	VLQSU06R153K	15M	
L4101	ELESN471KA	470	
L5901	ELESN101KA	100	
		CRYSTAL OSCILLATOR	
X3301	VSXS0207		AKEI
X5501	CSB503F38		
X5601	VSXS0208-B		
X6001	VSXS0784		AKEI
		PIN HEADERS	
P1002	VJPS0303	CONNECTOR 2P	
P1201	VJPS0765	CONNECTOR PLUG 7P	AKEI
P1202	VJPS0768	CONNECTOR PLUG 19P	AKEI
P1203	VJPS0767	CONNECTOR PLUG 13P	AKEI
P3003	VJPS0882	CONNECTOR 12P	
	(A,B,G,H)		
	VJPS0884	CONNECTOR 15P	
	(E,F,K)		
P4001	VJSS0888	FE CONNECTOR 2P	
P4592	VJPS0268	CONNECTOR	
	(A,B,E,F,G,H)		
	VJPS0275	CONNECTOR 5P	
	(K)		
P6001	VJPS0275	CONNECTOR 5P	
P6002	VJPS0881	CONNECTOR 8P	
P6201	VJPS0883	CONNECTOR 14P	
		SWITCHES	
SW6001	VSHS0058	LEAF SWITCH-SAFETY TAB	
SW6002	VSSS0159	MODE SELECT SWITCH	
SW6301	EVQ21405R	PUSH SWITCH	
SW6302	EVQ21405R	PUSH SWITCH	
SW6303	EVQPAD09K	CASSETTE DOWN SWITCH	
	(A,B,E,F)		
SW6304	EVQ21405R	PUSH SWITCH	
SW6305	EVQ21405R	PUSH SWITCH	
SW6306	EVQ21405R	PUSH SWITCH	
SW6307	EVQPB005K	PUSH SWITCH	AKEI
SW6308	EVQPB005K	PUSH SWITCH	AKEI
	(A,B,E,F)		
SW6309	EVQ21405R	PUSH SWITCH	
SW6310	EVQPB005K	PUSH SWITCH	AKEI
SW6311	EVQ21405R	PUSH SWITCH	
	(A,B,E,F)		
SW6312	EVQPB005K	PUSH SWITCH	AKEI
SW6313	EVQPB005K	PUSH SWITCH	AKEI
	(G,H,K)		

(E2, E23, E24, E27, E30, E32)

Ref. No.	Part No.	Part Name	Remarks
SW6314	EVQ21405R	PUSH SWITCH	
	(G,H,K)		
SW6315	EVQPB005K	PUSH SWITCH	AKEI
	(G,H,K)		
		FUSE & PROTECTOR	
F1001	VSFS0003A16	FUSE 125V 1.6A	⚠
	OR VSFS0012A16	FUSE 125V 1.6A	⚠
	OR VSFS0028A16	FUSE 125V 1.6A	⚠
	OR XBA1C16NU100	FUSE 125V 1.6A	⚠
PR1001	ICP-F38-1	IC PROTECTOR 1.5A	⚠
	OR UN10015	IC PROTECTOR 1.5A	⚠
	OR VSFS0029D25	IC PROTECTOR 1.5A	⚠
PR1050	ICP-F38-1	IC PROTECTOR 1.5A	⚠
	OR UN10015	IC PROTECTOR 1.5A	⚠
	OR VSFS0029D25	IC PROTECTOR 1.5A	⚠
PR1054	ICP-F25-1	IC PROTECTOR 1.0A	⚠ AKEI
	OR UN11010	IC PROTECTOR 1.0A	⚠ AKEI
		TRANSFORMER	
T1001	ETS28AD1F5AC		⚠
	OR VTPS0034		⚠
	OR VTPS0040		⚠
T4101	VLTS0304		
		JACKS	
JK4551	LJP28009A	FRONT A/V JACK SOCKET	AKEI
	(A,B,E,F,G,H)		
	LJP28011A	FRONT A/V JACK SOCKET	AKEI
	(K)		
JK4591	LJP68001A	EARPHONE JACK SOCKET	AKEI
		PRINTED CIRCUIT BOARD ASSEMBLY	
E2	VEPS4022A	TV STEREO C.B.A.	▲ E.S.D. AKEI
	(K)		
		MISCELLANEOUS	
E23	EYF52BC	FUSE HOLDER	
E24	LMH69003A	LED HOLDER	AKEI
	(A,B,E,F)		
E24	LMH69002A	LED HOLDER	AKEI
	(G,H,K)		
E27	GP1U292Q	INFRARED RECEIVER UNIT	AKEI
E30	VMTS0035	CUSHION,RUBBER	
E32	VMDS0038	LED SPACER	
	(A,B,E,F)		
		MAIN C.B.A. (C,D,I,J)	■
		INTEGRATED CIRCUITS	
IC1001	0N3131-R.KT	IC, LINEAR ERROR V. DET	⚠
	OR 0N3131-S.KT	IC, LINEAR ERROR V. DET	⚠
IC3001	AN3476FBP	IC, LINEAR VIDEO/AUDIO PROCESS	
IC3201	MN3885S	IC, CCD 1H DELAY	E.S.D.
IC3301	LC8643125F90	IC, 8BIT MICROPROCESSOR	E.S.D. AKEI
IC4151	AN5265	IC, LINEAR AUDIO AMP	
IC5301	AN5367FB	IC, LINEAR Y/C SIGNAL PROCESS	AKEI
IC6001	D784927YG101	IC, 16BIT MICROPROCESSOR	E.S.D. AKEI
IC6002	CNA1801N	REEL SENSOR UNIT	
IC6003	CNA1801N	REEL SENSOR UNIT	
IC6004	24LC01B/PS1	IC, 1K EEP ROM MEMORY	E.S.D.
		TRANSISTORS	
Q1001	2SC4533LP.KT		⚠
	OR 2SC5130LF608		⚠
Q1002	2SD1458		
Q1003	2SD636(Q,R,S)		

Ref. No.	Part No.	Part Name	Remarks
Q1004	2SB641(Q,R,S)		
Q1005	2SB641(R,S)		
Q1051	2SC3852		
Q1052	2SC945A(TP)		AKEI
Q3001	2SB709(R,S)	CHIP	
Q3002	2SD601(R,S)	CHIP	
Q3310	2SD601(R,S)	CHIP	
Q3311	2SB709(R,S)	CHIP	
Q3314	IMX1	COMPLX CMP SI NPN CHIP	
Q3315	UN2112	CHIP	
Q4001	2SB709(R,S)	CHIP	
Q4002	2SD601A(R,S)	CHIP	
Q4003	2SD601A(R,S)	CHIP	
Q4005	UN2115(R)	CHIP	
Q4006	UN2115	CHIP	
Q4101	2SC945A(TP)		AKEI
Q4154	UN2212	CHIP	
Q5301	2SD601(R,S)	CHIP	
Q5302	2SD601(R,S)	CHIP	
Q5303	2SD601(R,S)	CHIP	
Q5601	2SD601(R,S)	CHIP	
Q5901	2SD2259		
Q6002	2SB709(R,S)	CHIP	
Q6003	2SD601(R,S)	CHIP	
Q6004	2SB709(R,S)	CHIP	
Q6005	2SD601(R,S)	CHIP	
Q6006	UN211L	CHIP	
Q6007	2SD601(R,S)	CHIP	
Q6009	VEKS5522	PHOTO SENSOR UNIT	
Q6010	VEKS5522	PHOTO SENSOR UNIT	
		DIODES	
D1001	S1WBA40		⚠
	OR S1WBA60		⚠
	OR S1WBA60B		⚠
D1002	ERA18-04		
D1003	ERA18-04		
D1005	ERA18-04		
D1006	RU2YXLFC1		
D1007	ERA18-04		
D1008	EK13		
D1011	MA4051NH	ZENER 5.1V	
D1012	MA858		
D1013	MA165		
D1015	RD18FB	ZENER 18V	⚠
D1016	MA165		
D1051	MA4100N	ZENER 10V	
D1052	MA165		
D1053	MA165		
D1054	HZ30-3TD	ZENER 30V	
D3301	MA372J	CHIP	AKEI
D3302	MA165		
D4152	MA4120-M	ZENER 12V	
D4155	MA4056-M	ZENER 5.6V	
D4591	RD9.1EW	ZENER 9.1V	
D5304	MA165		
D5501	MA4062-L	ZENER 6.2V	
D5502	MA165		
D5503	MA165		
D5504	MA165		
D5505	MA165		
D5601	MA165		
D6001	VEKS5521	SENSOR LED UNIT	
D6002	MA165		
D6201	MA165		
D6202	MA165		
D6302	LN31GCPHLMU	LED GREEN	
D6303	LN21RCPHLMV	LED RED	
	(C,D)		
D6304	LN31GCPHLMU	LED GREEN	
	(C,D)		
	LN21RCPHLMV	LED RED	
	(I,J)		
D6305	LN41YCPHLM	LED YELLOW	
	(C,D)		
	LN31GCPHLMU	LED GREEN	
	(I,J)		

Ref. No.	Part No.	Part Name	Remarks
D6306	LN41YCPHLM	LED YELLOW	
	(I,J)		
		RESISTORS	
R1003	VRESE2TJ334	1/2W 330K	
R1004	ERG2SJ333H	METAL OXIDE 2W 33K	
R1005	ERG1SJ560P	METAL OXIDE 1W 56	
R1006	ERDS2TJ222	2.2K	
R1007	ERDS2TJ101	100	
R1008	ERDS2TJ392	3.9K	
R1010	ERD25FJ100P	10	⚠
	OR ERD25FPJ100P	10	⚠
	OR VRESF4FJ100P	10	⚠
R1011	ERD25FJ4R7P	4.7	⚠
	OR ERD25FPJ4R7P	4.7	⚠
	OR VRESF4FJ4R7P	4.7	⚠
R1014	ERDS2TJ221	220	
R1015	ERDS2TJ221	220	
R1016	ERDS2TJ562	5.6K	
R1017	ERDS2TJ103	10K	
R1018	ERDS2TJ183	18K	
R1019	ERDS2TJ392	3.9K	
R1020	ERDS2TJ682	6.8K	
R1022	ERDS2TJ221	220	
R1051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R1052	ERDS2TJ153	15K	
R1053	ERDS2TJ153	15K	
R1057	ERDS2TJ182	1.8K	
R3001	ERDS2TJ221	220	
R3004	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3005	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3006	ERDS2TJ221	220	
R3010	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3012	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3013	ERDS2TJ221	220	
R3014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R3015	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R3016	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3024	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R3025	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3026	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3028	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R3029	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R3032	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3034	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3035	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3036	ERJ6GEYG102V	MGF CHIP +-2% 1/10W 1K	
R3037	ERJ6GEYG102V	MGF CHIP +-2% 1/10W 1K	
R3038	ERDS2TJ222	2.2K	
R3039	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R3040	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3042	ERDS2TJ103	10K	
R3043	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3044	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3045	ERDS2TJ182	1.8K	
R3046	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3077	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3081	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3082	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3083	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R3084	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3085	ERJ6GEYJ181V	MGF CHIP 1/10W 180	
R3091	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3301	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3304	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3305	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3310	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3312	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3321	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3325	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3326	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3329	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3330	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3331	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3336	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3338	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R3345	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

Ref. No.	Part No.	Part Name	Remarks
R3354	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R3361	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3362	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R3363	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3365	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3366	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R3369	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R3370	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3372	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3375	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3377	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R3378	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3379	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R3380	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R3381	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3390	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERDS2TJ222	2.2K	
R4008	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4009	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4010	ERDS2TJ473	47K	
R4011	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4013	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4018	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4021	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4030	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R4031	ERDS2TJ561	560	
R4033	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4101	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R4102	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4151	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R4152	ERDS2TJ221	220	
R4153	ERJ6GEYJ823V	MGF CHIP 1/10W 82K	
R4155	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4157	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4158	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4159	ERDS2TJ100	10	
R4160	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
	(C,D)		
	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
	(I,J)		
R4163	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R4167	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4168	ERQ1ABJP8R2S	FUSE 1W 8.2	⚠
R4171	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R4593	ERDS2TJ681	680	
R4594	ERDS2TJ681	680	
R4595	ERDS2TJ681	680	
R4596	ERDS2TJ681	680	
R5301	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5302	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5303	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5304	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R5305	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R5306	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5307	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R5308	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R5309	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R5311	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5312	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5313	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5314	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5315	ERDS2TJ101	100	
R5316	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5317	ERDS2TJ101	100	
R5318	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R5320	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5321	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5322	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

Ref. No.	Part No.	Part Name	Remarks
R5323	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R5401	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5402	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R5403	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5405	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5406	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5501	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R5502	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R5503	ERDS2TJ471	470	
R5504	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5505	ERJ6ENF3241V	MGF CHIP +-1% 1/10W 3.24K	⚠ AKEI
R5508	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5510	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5511	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5512	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R5513	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5601	ERDS2TJ562	5.6K	
R5604	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R5610	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5611	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5612	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R5613	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5901	ERQ12AJ270P	FUSE 1/2W 27	⚠ AKEI
R5902	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5931	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5932	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5933	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6001	ERDS2TJ561	560	
R6002	ERDS2TJ561	560	
R6003	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6004	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6005	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6006	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R6007	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6008	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6009	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6010	ERDS2TJ560	56	
R6012	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6013	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6016	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R6017	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6018	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6019	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6020	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6021	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6023	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6025	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6027	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6028	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6029	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6032	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6033	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6034	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6035	ERDS2TJ221	220	
R6036	ERDS2TJ221	220	
R6040	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6042	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6047	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6049	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6051	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6057	ERDS2TJ272	2.7K	
R6060	ERDS2TJ563	56K	
R6061	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6063	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6064	ERDS2TJ243	24K	
R6065	ERDS2TJ333	33K	
R6066	ERDS2TJ103	10K	
R6067	ERDS2TJ103	10K	
R6068	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6069	ERDS2TJ103	10K	
R6070	ERDS2TJ103	10K	
R6071	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6072	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6073	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6074	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6075	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6076	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	

Ref. No.	Part No.	Part Name	Remarks
R6079	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6081	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6082	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6085	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6086	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6087	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6092	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6095	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6096	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6097	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6098	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6102	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6103	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6104	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6105	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6106	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6107	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6108	ERDS2TJ681	680	
R6109	ERDS2TJ272	2.7K	
R6110	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6202	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6203	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6204	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R6205	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6206	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6207	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6209	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R6210	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6212	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6213	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6214	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6215	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6216	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6217	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6218	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6301	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6302	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6303	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6305	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6306	ERDS2TJ392	3.9K	
R6307	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6308	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6310	ERDS2TJ471	470	
R6311	ERDS2TJ471	470	
R6312	ERDS2TJ471	470	
R6313	ERDS2TJ471	470	
		CAPACITORS	
C1001	ECKDRS103ZV	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEKD103PZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEMD103PZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEVD103PZ	CERAMIC +80%-20% 125V 0.01	⚠ AKEI
	OR VCKSGKD103QZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSGMD103QZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTKG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTMG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUKD103MY	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSUMD103MY	CERAMIC +-20% 125V 0.01	⚠
C1002	ECKDRS332MED	CERAMIC +-20% 125V 3300P	⚠
	OR ECKMRS332MEY	CERAMIC +-20% 125V 3300P	⚠ AKEI
	OR VCKSEKD332MY	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSEVD332MY	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTKG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTMG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUKD332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUMD332MX	CERAMIC +-20% 125V 3300P	⚠
C1003	VCKSFKK102MX	CERAMIC +-20% 125V 1000P	⚠
	OR VCKSFMK102MX	CERAMIC +-20% 125V 1000P	⚠ AKEI
	OR VCKSFVK102MX	CERAMIC +-20% 125V 1000P	⚠ AKEI
C1004	ECEA2DU820YE	ELECTROLYTIC 200V 82	
C1005	ECEA2DG4R7	ELECTROLYTIC 200V 4.7	
C1006	ECKW2H221KB5	CERAMIC 500V 220P	
C1007	VCYSBRC104MX	CERAMIC +-20% 16V 0.1	
C1009	ECQB1H103JF	POLYESTER +-5% 50V 0.01	
C1010	ECQB1H103JF	POLYESTER +-5% 50V 0.01	
C1011	ECEA1HU4R7	ELECTROLYTIC 50V 4.7	
C1012	ECEA1PEE331	ELECTROLYTIC 18V 330	

Ref. No.	Part No.	Part Name	Remarks
C1013	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1014	ECEA1HGE470	ELECTROLYTIC 50V 47	
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1017	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1018	ECQB1H104P9	POLYESTER +100%-0% 50V 0.1	
C1021	ECEA1HKG010	ELECTROLYTIC 50V 1	
C1025	ECKDRS221MB	CERAMIC +-20% 125V 220P	⚠
	OR ECKMRS221MBY	CERAMIC +-20% 125V 220P	⚠ AKEI
	OR VCKSEJD221KW	CERAMIC 125V 220P	⚠ AKEI
	OR VCKSELD221KW	CERAMIC 125V 220P	⚠ AKEI
	OR VCKSHJD221MW	CERAMIC +-20% 125V 220P	⚠
	OR VCKSHLD221MW	CERAMIC +-20% 125V 220P	⚠
	OR VCKSTJG221KW	CERAMIC 250V 220P	⚠ AKEI
	OR VCKSTLG221KW	CERAMIC 250V 220P	⚠ AKEI
	OR VCKSUJD221KW	CERAMIC 125V 220P	⚠ AKEI
	OR VCKSULD221KW	CERAMIC 125V 220P	⚠ AKEI
C1028	ECKDRS221MB	CERAMIC +-20% 125V 220P	⚠
	OR ECKMRS221MBY	CERAMIC +-20% 125V 220P	⚠ AKEI
	OR VCKSEJD221KW	CERAMIC 125V 220P	⚠ AKEI
	OR VCKSELD221KW	CERAMIC 125V 220P	⚠ AKEI
	OR VCKSHJD221MW	CERAMIC +-20% 125V 220P	⚠
	OR VCKSHLD221MW	CERAMIC +-20% 125V 220P	⚠
	OR VCKSTJG221KW	CERAMIC 250V 220P	⚠ AKEI
	OR VCKSTLG221KW	CERAMIC 250V 220P	⚠ AKEI
	OR VCKSUJD221KW	CERAMIC 125V 220P	⚠ AKEI
	OR VCKSULD221KW	CERAMIC 125V 220P	⚠ AKEI
C1030	VCYSBRE183KX	CERAMIC 25V 0.018	
C1051	ECEA1HUR47	ELECTROLYTIC 50V 0.47	
C1052	ECEA1CU100	ELECTROLYTIC 16V 10	
C3001	ECUV1H103KBN	C CHIP 50V 0.01	
C3006	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3007	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3008	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3009	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3013	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3015	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3016	ECEA1CKS100	ELECTROLYTIC 16V 10	
C3019	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3020	ECEA1CKA220	ELECTROLYTIC 16V 22	
C3021	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3022	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3023	ECUV1H680JCN	C CHIP +-5% 50V 68P	
C3024	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3025	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3026	ECUV1H822KBN	C CHIP 50V 8200P	
C3027	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3030	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3031	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3032	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3034	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3035	ECUV1H180JCN	C CHIP +-5% 50V 18P	
C3036	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3038	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3041	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3043	ECUV1H392KBN	C CHIP 50V 3900P	
C3044	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3045	ECEA1HKS3R3	ELECTROLYTIC 50V 3.3	
C3046	ECEA1HKS2R2	ELECTROLYTIC 50V 2.2	
C3047	ECEA0JKS101	ELECTROLYTIC 6.3V 100	
C3048	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3050	ECEA0JKS220	ELECTROLYTIC 6.3V 22	
C3053	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3054	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3055	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3056	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3057	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3058	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3060	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3081	ECUV1H102KBN	C CHIP 50V 1000P	
C3082	ECUV1H332KBN	C CHIP 50V 3300P	
C3083	ECUV1H561JCN	C CHIP +-5% 50V 560P	
C3084	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3231	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3232	ECUV1H102KBN	C CHIP 50V 1000P	
C3234	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3235	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3236	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3237	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	

Ref. No.	Part No.	Part Name	Remarks
C3301	ECUV1H330JCN	C CHIP +-5% 50V 33P	
C3302	ECUV1H330JCN	C CHIP +-5% 50V 33P	
C3303	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3304	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3305	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3306	ECUV1H270JCN	C CHIP +-5% 50V 27P	
C3307	ECUV1H080CCN	C CHIP +-0.25P 50V 8P	
C3308	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3309	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3310	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3311	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3312	ECUV1H102KBN	C CHIP 50V 1000P	
C3313	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3314	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3317	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C3326	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3363	ECUV1H220JCN	C CHIP +-5% 50V 22P	
C4001	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C4002	ECEA1HKS010	ELECTROLYTIC 50V 1	
C4003	ECUV1H272KBN	C CHIP 50V 2700P	
C4004	ECUV1H103KBN	C CHIP 50V 0.01	
C4005	ECEA0JKS220	ELECTROLYTIC 6.3V 22	
C4006	ECUV1H102KBN	C CHIP 50V 1000P	
C4007	ECEA0JKS220	ELECTROLYTIC 6.3V 22	
C4008	ECEA0JKS470	ELECTROLYTIC 6.3V 47	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4010	ECUV1E333KBN	C CHIP 25V 0.033	
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4013	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4014	ECEA1HKS010	ELECTROLYTIC 50V 1	
C4018	ECUV1H103KBN	C CHIP 50V 0.01	
C4030	ECUV1E333KBN	C CHIP 25V 0.033	
C4032	ECUV1H103KBN	C CHIP 50V 0.01	
C4033	ECEA1HKS010	ELECTROLYTIC 50V 1	
C4102	ECQB1562JF	POLYESTER +-5% 200V 5600P	
C4103	ECUV1H103KBN	C CHIP 50V 0.01	
C4104	ECUV1H103KBN	C CHIP 50V 0.01	
C4105	ECEA1CKA220	ELECTROLYTIC 16V 22	
C4151	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4152	ECEA1CKA470	ELECTROLYTIC 16V 47	
C4153	ECUV1H222KBN	C CHIP 50V 2200P	
C4154	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4155	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4156	ECA1EM471B	ELECTROLYTIC 25V 470	
C4158	ECUV1E473ZFN	C CHIP +80%-20% 25V 0.047	
C4159	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4160	ECA1CM101B	ELECTROLYTIC 16V 100	
C4161	ECUV1E473KBN	C CHIP 25V 0.047	
C4163	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4164	ECUV1H103KBN	C CHIP 50V 0.01	
C4171	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5301	ECEA1CKA100	ELECTROLYTIC 16V 10	
C5302	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C5303	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C5305	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C5306	ECEA1CKA100	ELECTROLYTIC 16V 10	
C5307	ECEA1CKN100	ELECTROLYTIC 16V 10	
C5308	ECEA1CKN100	ELECTROLYTIC 16V 10	
C5401	ECEA1HKNR22	ELECTROLYTIC 50V 0.22	
C5402	ECUV1H222KBN	C CHIP 50V 2200P	
C5403	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C5501	ECUV1E183KBN	C CHIP 25V 0.018	
C5502	ECUV1H471KBN	C CHIP 50V 470P	
C5505	ECEA1CKA470	ELECTROLYTIC 16V 47	
C5506	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5507	ECEA1CKA100	ELECTROLYTIC 16V 10	
C5508	ECUV1H221JSN	C CHIP +-5% 50V 220P	AKEI
C5510	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5511	ECUV1E333KBN	C CHIP 25V 0.033	
C5516	ECUV1E333KBN	C CHIP 25V 0.033	
C5601	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5602	ECUV1E104KBN	C CHIP 25V 0.1	
C5603	ECUV1H150JCN	C CHIP +-5% 50V 15P	
C5604	ECEA1HKA010	ELECTROLYTIC 50V 1	
C5605	ECUV1H153KBN	C CHIP 50V 0.015	
C5607	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5902	ECEA1CKA470	ELECTROLYTIC 16V 47	
C5903	ECEA1CKA470	ELECTROLYTIC 16V 47	

Ref. No.	Part No.	Part Name	Remarks
C5904	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5905	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C5906	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5931	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C5932	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C6001	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
C6004	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6005	ECUV1H103KBN	C CHIP 50V 0.01	
C6009	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6011	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6012	ECUV1H180JCN	C CHIP +-5% 50V 18P	
C6013	ECUV1H150GCN	C CHIP +-2% 50V 15P	
C6014	ECUV1H020CCN	C CHIP +-0.25P 50V 2P	
C6015	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6016	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6017	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6018	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6019	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6022	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6029	ECUV1H102KBN	C CHIP 50V 1000P	
C6030	ECUV1H102KBN	C CHIP 50V 1000P	
C6034	ECEA1CKA100	ELECTROLYTIC 16V 10	
C6201	ECUV1H102KBN	C CHIP 50V 1000P	
C6203	ECUV1H103KBN	C CHIP 50V 0.01	
C6206	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6207	ECUV1H151KN	C CHIP 50V 150P	
C6208	ECUV1E104KBN	C CHIP 25V 0.1	
C6209	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6211	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6212	ECUV1H100DCN	C CHIP +-0.5P 50V 10P	
C6213	ECUV1H272KBN	C CHIP 50V 2700P	
C6214	ECUV1H102KBN	C CHIP 50V 1000P	
C6215	ECEA1HKA010	ELECTROLYTIC 50V 1	
C6216	ECUV1H272KBN	C CHIP 50V 2700P	
C6218	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6219	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
		FILTERS	
FL4001	VLFS0014		
		COILS	
L1001	ELF15N005A	LINE FILTER 0.5A 18M	⚠
	OR ELF18D290A	LINE FILTER 0.5A 18M	⚠
	OR LLN23012A	LINE FILTER 0.5A 18M	⚠
	OR VLQS0157	LINE FILTER 0.5A 18M	⚠
	OR VLQS0166	LINE FILTER 0.5A 18M	⚠
	OR VLQS0167	LINE FILTER 0.5A 18M	⚠
	OR VLQS0168	LINE FILTER 0.5A 18M	⚠ AKEI
L1002	VLQSW07D220M	+-20% 22	
L1003	VLQSW07D9R0M	+-20% 9	
L1006	VLPS0005A	BEAD INDUCTOR	
L3002	ELESN101KA	100	
L3005	VLQSH02R330K	33	
L3010	ELESN470KA	47	
L3231	ELESN221KA	220	
L3301	VLQSH02R5R6J	+-5% 5.6	AKEI
L3302	ELESN101KA	100	
L4002	VLQSH02R101K	100	
L4004	VLQSH02R120K	12	
	(C,D)		
	VLQSH02R100K	10	
	(I,J)		
L4005	VLQSU06R153K	15M	
L4101	ELESN471KA	470	
L5901	ELESN101KA	100	
		CRYSTAL OSCILLATOR	
X3301	VSXS0207		AKEI
X5501	CSB503F38		
X5601	VSXS0208-B		
X6001	VSXS0784		AKEI

Ref. No.	Part No.	Part Name	Remarks
		PIN HEADERS	
P1002	VJPS0303	CONNECTOR 2P	
P1201	VJPS0765	CONNECTOR PLUG 7P	AKEI
P1202	VJPS0768	CONNECTOR PLUG 19P	AKEI
P1203	VJPS0767	CONNECTOR PLUG 13P	AKEI
P3003	VJPS0882	CONNECTOR 12P	
P4001	VJSS0888	FE CONNECTOR 2P	
P4592	VJPS0268	CONNECTOR	
P6001	VJPS0275	CONNECTOR 5P	
P6002	VJPS0881	CONNECTOR 8P	
P6201	VJPS0883	CONNECTOR 14P	
		SWITCHES	
SW6001	VSHS0058	LEAF SWITCH-SAFETY TAB	
SW6002	VSSS0159	MODE SELECT SWITCH	
SW6301	EVQ21405R	PUSH SWITCH	
SW6302	EVQ21405R	PUSH SWITCH	
SW6303	EVQPAD09K	CASSETTE DOWN SWITCH	
	(C,D)		
SW6304	EVQ21405R	PUSH SWITCH	
SW6305	EVQ21405R	PUSH SWITCH	
SW6307	EVQ21405R	PUSH SWITCH	
SW6308	EVQ21405R	PUSH SWITCH	
SW6309	EVQ21405R	PUSH SWITCH	
SW6310	EVQ21405R	PUSH SWITCH	
SW6311	EVQ21405R	PUSH SWITCH	
	(C,D)		
SW6312	EVQ21405R	PUSH SWITCH	
SW6313	EVQ21405R	PUSH SWITCH	
	(I,J)		
SW6315	EVQPB005K	PUSH SWITCH	AKEI
	(I,J)		
		FUSE & PROTECTOR	
F1001	VSFS0003A16	FUSE 125V 1.6A	⚠
	OR VSFS0012A16	FUSE 125V 1.6A	⚠
	OR VSFS0028A16	FUSE 125V 1.6A	⚠
	OR XBA1C16NU100	FUSE 125V 1.6A	⚠
PR1001	ICP-F38-1	IC PROTECTOR 1.5A	⚠
	OR UN10015	IC PROTECTOR 1.5A	⚠
	OR VSFS0029D25	IC PROTECTOR 1.5A	⚠
PR1050	ICP-F38-1	IC PROTECTOR 1.5A	⚠
	OR UN10015	IC PROTECTOR 1.5A	⚠
	OR VSFS0029D25	IC PROTECTOR 1.5A	⚠
PR1054	ICP-F25-1	IC PROTECTOR 1.0A	⚠ AKEI
	OR UN11010	IC PROTECTOR 1.0A	⚠ AKEI
		TRANSFORMER	
T1001	ETS28AD1F5AC		⚠
	OR VTPS0034		⚠
	OR VTPS0040		⚠
T4101	VLTS0304		
		JACKS	
JK4551	LJP28009A	FRONT A/V JACK SOCKET	AKEI
JK4591	LJP28006A	EARPHONE JACK SOCKET	AKEI
		MISCELLANEOUS	
E23	EYF52BC	FUSE HOLDER	
E27	PNA4617M00HC	INFRARED RECEIVER UNIT	AKEI
E30	VMTS0035	CUSHION,RUBBER	
E32	VMDS0038	LED SPACER	
E33	VMXS0583	LED SPACER	

Ref. No.	Part No.	Part Name	Remarks
		TV STEREO C.B.A. (K)	▲
		INTEGRATED CIRCUITS	
IC4901	VCRS0216	IC, HYBRID MTS/SAP AUDIO PROCESS	E.S.D. AKEI
IC9201	AN7420	IC, LINEAR FM SIGNAL PROCESS	AKEI
IC9301	TC4052BP	IC, CMOS STANDARD LOGIC SWITCHING	E.S.D. AKEI
IC9302	UPC4570C	IC, LINEAR OP AMP	
		TRANSISTORS	
Q4301	2SA733(TP)		AKEI
Q9301	2SC945A(TP)		AKEI
Q9302	2SC945A(TP)		AKEI
		DIODES	
D4301	MA165		
D4302	MA165		
D4303	MA165		
D4304	MA165		
D9301	MA165		
		RESISTORS	
R4301	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4302	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4303	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R4304	ERJ6GEYJ124V	MGF CHIP 1/10W 120K	
R4305	ERJ6GEYJ124V	MGF CHIP 1/10W 120K	
R4306	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4901	EVNDCAA03B14	VARIABLE 10K	
R9201	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9202	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9203	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9204	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R9205	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R9206	EVMF6SA00B53	VARIABLE 100K	AKEI
R9207	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R9208	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R9209	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R9303	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R9305	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9306	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9308	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R9309	ERDS2TJ221	220	
R9310	ERDS2TJ221	220	
R9311	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R9312	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R9313	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9314	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9315	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R9316	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R9317	ERDS2TJ221	220	
R9318	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9320	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R9321	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R9323	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R9324	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9325	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R9326	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R9327	ERDS2TJ221	220	
		CAPACITORS	
C4301	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C4302	ECEA1CKA101	ELECTROLYTIC 16V 100	
C4901	ECEA1CKA470	ELECTROLYTIC 16V 47	
C9201	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9202	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C9203	ECEA1CKA100	ELECTROLYTIC 16V 10	
C9204	ECQP1H102J	POLYESTER +-5% 50V 1000P	
C9205	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9206	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	

Ref. No.	Part No.	Part Name	Remarks
C9207	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9208	ECUV1H223KBN	C CHIP 50V 0.022	
C9209	ECUV1H223KBN	C CHIP 50V 0.022	
C9303	ECEA1CKA470	ELECTROLYTIC 16V 47	
C9304	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9305	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C9306	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9307	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9308	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9309	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9310	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9311	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C9312	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9313	ECEA1HKA010	ELECTROLYTIC 50V 1	
C9314	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C9315	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9316	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C9317	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
		COILS	
L9201	ELESN101KA	100	
L9301	ELESN101KA	100	
		PIN HEADERS	
P4201	VJHS0298	PACK PIN 8PIN	
P4202	VJHS0295	PACK PIN 5P	
P4204	VJHS0298	PACK PIN 8PIN	
P4301	VJPS0286	CONNECTOR 7P	
		MISCELLANEOUS	
E39	VMAS1912	P.C.B. SUPPORT ANGLE	
		HEAD AMP C.B.A. (A,B,C,D,G,H,I,J)	■
		INTEGRATED CIRCUITS	
IC2601	AN3809K	IC, LINEAR CYL. DRIVE	
IC3501	AN3371SB	IC, LINEAR HEAD AMP	
		RESISTORS	
R2601	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2602	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2603	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2604	ERDS2TJ1R0	1	
R2605	ERDS2TJ1R2	1.2	
R2606	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3507	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
		CAPACITORS	
C2604	ECUV1E104KBN	C CHIP 25V 0.1	
C2605	ECUV1E104KBN	C CHIP 25V 0.1	
C2606	ECUV1E104KBN	C CHIP 25V 0.1	
C2607	ECUV1E104KBN	C CHIP 25V 0.1	
C2608	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2609	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2610	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C2611	ECUV1E333KBN	C CHIP 25V 0.033	
C2612	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2613	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2614	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2615	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3504	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3505	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3506	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3508	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3511	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3512	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3513	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3528	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3529	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	

Ref. No.	Part No.	Part Name	Remarks
		COILS	
L3501	ELESN101KA	100	
		PIN HEADERS	
P3501	VJSS0883	CONNECTOR 12P	
		HEAD AMP C.B.A. (E,F,K)	■
		INTEGRATED CIRCUITS	
IC2601	AN3809K	IC, LINEAR CYL. DRIVE	
IC3501	AN3361SB	IC, LINEAR HEAD AMP	
		RESISTORS	
R2601	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2602	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2603	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2604	ERDS2TJ1R0	1	
R2605	ERDS2TJ1R2	1.2	
R2606	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3501	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3502	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3503	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3504	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3505	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3506	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3507	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
		CAPACITORS	
C2604	ECUV1E104KBN	C CHIP 25V 0.1	
C2605	ECUV1E104KBN	C CHIP 25V 0.1	
C2606	ECUV1E104KBN	C CHIP 25V 0.1	
C2607	ECUV1E104KBN	C CHIP 25V 0.1	
C2608	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2609	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2610	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C2611	ECUV1E333KBN	C CHIP 25V 0.033	
C2612	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2613	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2614	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2615	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3504	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3505	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3506	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3507	ECUV1H103KBN	C CHIP 50V 0.01	
C3508	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3511	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3512	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3513	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3519	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3520	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3524	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3525	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3528	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3529	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3532	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3533	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
		COILS	
L3501	ELESN101KA	100	
		PIN HEADERS	
P3501	VJSS0885	CONNECTOR 15P	

Ref. No.	Part No.	Part Name	Remarks
		JUNCTION C.B.A.	■
		RESISTORS	
R2531	ERDS2TJ270	27	
		CAPACITORS	
C2531	ECEA1CKA220	ELECTROLYTIC 16V 22	
C2532	ECEA1CKA220	ELECTROLYTIC 16V 22	
C2533	ECEA1CKA220	ELECTROLYTIC 16V 22	
		PIN HEADERS	
P2531	VJSS0884	CONNECTOR 14P	
		STEREO AMP C.B.A. (K)	■
		INTEGRATED CIRCUITS	
IC4601	AN5265	IC, LINEAR AUDIO AMP	
IC4602	AN5265	IC, LINEAR AUDIO AMP	
		TRANSISTORS	
Q4601	2SC945A(TP)		AKEI
Q4602	2SC945A(TP)		AKEI
		DIODES	
D4602	MA4120-M	ZENER 12V	
D4603	MA4056-M	ZENER 5.6V	
D4604	MA165		
D4605	MA165		
		RESISTORS	
R4602	ERDS2TJ102	1K	
R4603	ERDS2TJ102	1K	
R4604	ERDS2TJ683	68K	
R4605	ERDS2TJ221	220	
R4606	ERDS2TJ561	560	
R4608	ERDS2TJ823	82K	
R4609	ERDS2TJ681	680	
R4611	ERDS2TJ561	560	
R4613	ERDS2TJ103	10K	
R4614	ERDS2TJ103	10K	
R4615	ERDS2TJ100	10	
R4616	ERDS2TJ221	220	
R4617	ERQ1ABJP4R7S	FUSE 1W 4.7	⚠ AKEI
R4618	ERDS2TJ823	82K	
R4619	ERDS2TJ103	10K	
R4620	ERDS2TJ681	680	
R4623	ERDS2TJ103	10K	
R4624	ERDS2TJ100	10	
R4626	ERDS2TJ331	330	
R4628	ERDS2TJ471	470	
R4629	ERDS2TJ471	470	
R4630	ERDS2TJ562	5.6K	
R4631	ERDS2TJ392	3.9K	
		CAPACITORS	
C4601	ECA1CM220B	ELECTROLYTIC 16V 22	
C4602	ECA1CM470B	ELECTROLYTIC 16V 47	
C4603	ECA1CM100B	ELECTROLYTIC 16V 10	
C4604	ECA1HM4R7B	ELECTROLYTIC 50V 4.7	
C4605	ECA1HM4R7B	ELECTROLYTIC 50V 4.7	
C4607	VCYSBRE103KX	CERAMIC 25V 0.01	AKEI
C4608	ECA1CM100B	ELECTROLYTIC 16V 10	
C4609	ECA1CM101B	ELECTROLYTIC 16V 100	
C4610	VCYSBRE473KX	CERAMIC 25V 0.047	AKEI
C4611	ECA1CM470B	ELECTROLYTIC 16V 47	
C4612	ECA1CM100B	ELECTROLYTIC 16V 10	
C4613	ECA1HM4R7B	ELECTROLYTIC 50V 4.7	

Ref. No.	Part No.	Part Name	Remarks
C4614	VCYSBRE103KX	CERAMIC 25V 0.01	AKEI
C4615	ECA1CM100B	ELECTROLYTIC 16V 10	
C4616	ECA1EM102B	ELECTROLYTIC 25V 1000	
C4617	ECA1CM101B	ELECTROLYTIC 16V 100	
C4618	VCYSBRE473KX	CERAMIC 25V 0.047	AKEI
C4624	ECQB1H473KF	POLYESTER 50V 0.047	
C4625	ECQB1H473KF	POLYESTER 50V 0.047	
		PIN HEADERS	
P4601	VEKS5535	CONNECTOR UNIT	AKEI
P4602	VEKS5536	CONNECTOR UNIT	AKEI
P4604	VJPS0268	CONNECTOR	
P4605	VJPS0268	CONNECTOR	
		MISCELLANEOUS	
E40	VMXS0876	P.C.B. SPACER A	AKEI
		TV MAIN C.B.A.	■
		INTEGRATED CIRCUITS	
IC451	LA7837	IC, LINEAR VERTICAL OUT	
IC801	STR30130	IC, LINEAR +130V REGULATOR	⚠
		TRANSISTORS	
Q431	2SA733(TQ)		AKEI
Q501	2SC1473-QNC		
	(A,B,C,D,E,F)		
	2SC3063LBKT		AKEI
	(G,H,I,J,K)		
Q505	2SA733(TQ)		AKEI
Q506	2SA733(TQ)		AKEI
Q507	2SC945A(TQ)		
Q541	2SA733(TQ)		AKEI
Q551	2SD2499LBK		⚠
	(A,B,C,D,E,F)		
	2SD2586LBK		⚠ AKEI
	(G,H,I,J,K)		
Q571	2SC945A(TQ)		
Q801	2SD636(Q,R,S)		
Q7001	2SD636(Q,R,S)		
	(K)		
		DIODES	
D401	ERB12-01V		
D503	ERB43-04V		
D507	MA4200-H	ZENER 20V	
D508	MA165		
D541	MA165		
D553	ERB43-04V		
D554	MA167		
D558	ERB43-04V		
D560	ERB43-04V		
D580	MA167		
	(A,B,C,D,E,F)		
	MA185		
	(G,H,I,J,K)		
D801	EM02BMV		⚠ AKEI
	OR ERC13-08V		⚠
D802	EM02BMV		⚠ AKEI
	OR ERC13-08V		⚠
D803	EM02BMV		⚠ AKEI
	OR ERC13-08V		⚠
D804	EM02BMV		⚠ AKEI
	OR ERC13-08V		⚠
D805	MA165		
D806	MA167		

Ref. No.	Part No.	Part Name	Remarks
D851	VRPSCZ5JM050	THERMISTER	⚠ AKEI
	OR VRPSFZ5JM050	THERMISTOR	⚠
	OR VRPSJZ5JM050	THERMISTOR	⚠ AKEI
	(A,B,C,D,E,F)		
	ERPF5B0M050K	THERMISTOR	⚠
	OR TRPF5B0M050K	THERMISTOR	⚠ AKEI
	OR VRPSKF5JM050	THERMISTOR	⚠ AKEI
	(G,H,I,J,K)		
		RESISTORS	
R401	ERDS2TJ471	470	
	(A,B,E,F)		
	ERDS2TJ391	390	
	(C,D)		
	ERDS2TJ471	470	
	(G,H,K)		
	ERDS2TJ181	180	
	(I,J)		
R402	ERDS2TJ123	12K	
	(A,B,E,F)		
	ERDS2TJ183	18K	
	(C,D)		
	ERDS2TJ153	15K	
	(G,H,K)		
	ERDS2TJ682	6.8K	
	(I,J)		
R405	ERG1SJ102P	METAL OXIDE 1W 1K	
R406	ERDS2TJ334	330K	
R409	ERDS2TJ223	22K	
	(A,B,E,F)		
	ERDS2TJ273	27K	
	(C,D)		
	ERDS2TJ333	33K	
	(G,H,K)		
	ERDS2TJ123	12K	
	(I,J)		
R410	ERDS2TJ473	47K	
	(A,B,C,D,E,F)		
	ERDS2TJ332	3.3K	
	(G,H,K)		
	ERDS2TJ392	3.9K	
	(I,J)		
R411	ERDS2TJ123	12K	
	(A,B,C,D,E,F)		
	ERDS2TJ473	47K	
	(G,H,I,J,K)		
R413	ERDS2TJ123	12K	
	(A,B,C,D,E,F,I,J)		
	ERDS2TJ273	27K	
	(G,H,K)		
R414	ERD25FJ2R2P	2.2	⚠
	(A,B,C,D,E,F)		
	ERD25FJ1R2P	1.2	⚠
	(G,H,K)		
	ERD25FJ1R5P	1.5	⚠
	(I,J)		
R422	ERDS2TJ331	330	
R427	ERD25FJ1R5P	1.5	⚠
	(A,B,C,D,E,F)		
	ERD25FJ5R6P	5.6	⚠
	(G,H,K)		
	ERD25FJ1R8P	1/4W 1.8	⚠ AKEI
	(I,J)		
R431	ERDS2TJ103	10K	
R432	ERDS2TJ472	4.7K	
	(A,B,C,D,E,F)		
	ERDS2TJ273	27K	
	(G,H,K)		
	ERDS2TJ333	33K	
	(I,J)		
R433	ERDS2TJ332	3.3K	
	(A,B,C,D,E,F)		
	ERDS2TJ123	12K	
	(G,H,K)		
	ERDS2TJ472	4.7K	
	(I,J)		
R434	ERDS2TJ103	10K	

Ref. No.	Part No.	Part Name	Remarks
R435	ERDS2TJ102	1K	
R466	ERDS2TJ683	68K	
R468	ERDS2TJ102	1K	
R471	ERDS2TJ122	1.2K	
	(G,H,K)		
	ERDS2TJ182	1.8K	
	(I,J)		
R501	ERDS2TJ681	680	
R502	ERDS2TJ332	3.3K	
R503	ER0S2TKF8451	METAL FILM +-1% 8.45K	⚠
	OR VRESR4TF8451	METAL FILM +-1% 8.45K	⚠ AKEI
	(A,B,C,D,E,F)		
	ER0S2TKF8661	METAL FILM +-1% 8.66K	⚠
	OR VRESR4TF8661	METAL FILM +-1% 8.66K	⚠ AKEI
	(G,H,I,J,K)		
R504	ERDS2TJ101	100	
	(G,H,K)		
R507	ERDS2TJ472	4.7K	
R511	ERG2SJ392H	METAL OXIDE 2W 3.9K	
	(G,H,I,J,K)		
R512	ERDS2TJ102	1K	
R516	ERG3ANJ392H	METAL OXIDE 3W 3.9K	
	(A,B,C,D,E,F)		
	ERG3ANJ332H	METAL OXIDE 3W 3.3K	
	(G,H,I,J,K)		
R518	ERG2ANJ682H	METAL OXIDE 2W 6.8K	
	(A,B,E,F)		
	ERG2ANJ123H	METAL OXIDE 2W 12K	
	(C,D)		
	ERQ1CJP102S	FUSE 1W 1K	⚠
	(G,H,I,J,K)		
R519	ERDS2TJ472	4.7K	
R520	ERDS2TJ562	5.6K	
R521	ERDS2TJ101	100	
R522	ERDS2TJ103	10K	
R523	ERDS2TJ333	33K	
R524	ERDS2TJ223	22K	
R525	ERDS2TJ822	8.2K	
R526	ERDS2TJ155	1.5M	
R528	ERDS2TJ272	2.7K	
R541	ERDS2TJ473	47K	
R542	ERDS2TJ103	10K	
R543	ERDS2TJ472	4.7K	
R544	ERDS2TJ103	10K	
R552	ERDS2TJ273	27K	
R553	ERDS2TJ102	1K	
R554	ERDS2TJ103	10K	
	(A,B,C,D,E,F)		
	ERDS2TJ123	12K	
	(G,H,I,J,K)		
R555	ERDS2TJ154	150K	
	(A,B,E,F)		
	ERDS2TJ124	120K	
	(C,D)		
	ERDS2TJ823	82K	
	(G,H,I,J,K)		
R556	ERDS2TJ823	82K	
	(A,B,E,F,G,H,I,J,K)		
	ERDS2TJ124	120K	
	(C,D)		
R558	ERG2ANJ471H	METAL OXIDE 2W 470	
	(A,B,C,D,E,F)		
	ERG2ANJ561H	METAL OXIDE 2W 560	
	(G,H,I,J,K)		
R559	ERDS2TJ123	12K	
	(G,H,I,J,K)		
R560	ERF2AK3R9P	W FLMPRF +-10% 2W 3.9	AKEI
	(G,H,I,J,K)		
R561	ERQ2CKPR82S	FUSE 2W 0.82	⚠ AKEI
	(G,H,K)		
	ERQ2CJP1R2S	FUSE 2W 1.2	⚠ AKEI
	(I,J)		
R571	ERDS2TJ101	100	
R572	ERDS2TJ222	2.2K	
R573	ERDS2TJ100	10	
R574	ERDS2TJ272	2.7K	
R575	ERDS2TJ331	330	

Ref. No.	Part No.	Part Name	Remarks
R580	ERG2SJ471H	METAL OXIDE 2W 470	
	(A,B,C,D,E,F)		
	ERG2SJ331H	METAL OXIDE 2W 330	
	(G,H,I,J,K)		
R801	ERF3AKR82	W FLMPRF +-10% 3W 0.82	⚠
	OR KRF3AKR82	W FLMPRF +-10% 3W 0.82	⚠
	OR LAR03R82K02	W FLMPRF +-10% 3W 0.82	⚠
	OR LAR03R82K05	W FLMPRF +-10% 3W 0.82	⚠ AKEI
	OR LAR03R82K06	W FLMPRF +-10% 3W 0.82	⚠ AKEI
R802	ERDS1FJ103P	1/2W 10K	⚠
	OR ERDS1FPJ103	1/2W 10K	⚠
	OR ERDS1FPJ103V	1/2W 10K	⚠
R803	ERQ2ABJP5R6S	FUSE 2W 5.6	⚠
	(A,B,C,D,E,F)		
	ERQ3CJ5R6H	FUSE 3W 5.6	⚠
	(G,H,I,J,K)		
R804	LAR10331J01	W FLMPRF 10W 330	
	(A,B,C,D,E,F)		
	ERF15ZJ181	W FLMPRF 15W 180	
	(G,H,K)		
	LAR15201J01	W FLMPRF 15W 200	
	(I,J)		
R805	ERDS2TJ104	100K	
R806	ERQ14AJ470P	FUSE 47	⚠
R810	ERDS2TJ222	2.2K	
R811	ERDS2TJ103	10K	
R812	VRESC2TK825C	SOLID +-10% 1/2W 8.2M	⚠
	OR VRESC2TK825T	SOLID +-10% 1/2W 8.2M	⚠
R813	ERDS2TJ124	120K	
R7002	ERDS2TJ271	270	
R7003	ERDS2TJ222	2.2K	
	(K)		
R7004	ERDS2TJ561	560	
	(K)		
R7030	ERDS2TJ182	1.8K	
R7031	ERDS2TJ182	1.8K	
R7032	ERDS2TJ182	1.8K	
		CAPACITORS	
C401	ECEA1HGE2R2	ELECTROLYTIC 50V 2.2	
C402	ECEA1CU471	ELECTROLYTIC 16V 470	
C408	ECA1HGE010KB	ELECTROLYTIC 50V 1	AKEI
	(A,B,C,D,E,F)		
	ECA1HGE2R2KB	ELECTROLYTIC 50V 2.2	AKEI
	(G,H,I,J,K)		
C409	ECA1VM101B	ELECTROLYTIC 35V 100	
C413	ECQB1H104KF	POLYESTER 50V 0.1	
C414	ECEA1CU222	ELECTROLYTIC 16V 2200	
C418	ECA1VM221B	ELECTROLYTIC 35V 220	
C458	ECQB1H103KF	POLYESTER 50V 0.01	
C510	ECKW2H821KB5	CERAMIC 500V 820P	
	(A,B,C,D,E,F)		
	ECKW2H681KB5	CERAMIC 500V 680P	
	(G,H,I,J,K)		
C513	ECA1HM100B	ELECTROLYTIC 50V 10	
C516	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C520	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C521	ECA1HM100B	ELECTROLYTIC 50V 10	
C523	ECA1HM010B	ELECTROLYTIC 50V 1	
C524	ECKC3D681KBN	CERAMIC 2KV 680P	⚠ AKEI
	OR ECKC3D681KBP	CERAMIC 2KV 680P	⚠ AKEI
	(C,D)		
C531	ECKW1H681KB5	CERAMIC 50V 680P	
	(A,B,C,D,E,F)		
C534	VCYSBRC104MX	CERAMIC +-20% 16V 0.1	
	(A,B,E,F,G,H,K)		
C541	ECA1HM100B	ELECTROLYTIC 50V 10	
C552	ECEA1VU470	ELECTROLYTIC 35V 47	
C553	ECKW2H221KB5	CERAMIC 500V 220P	
C554	ECWH15H682J4	POLYESTER +-5% 1.5KV 6800P	⚠
	OR VCFSH15682JA	POLYESTER +-5% 1.5KV 6800P	⚠
	(A,B,E,F)		
	ECWH15H562J4	POLYESTER +-5% 1.5KV 5600P	⚠ AKEI
	OR VCFSH15562JA	POLYESTER +-5% 1.5KV 5600P	⚠
	(C,D)		
	ECWH15H822J4	POLYESTER +-5% 1250V 8200P	⚠ AKEI
	OR VCFSH15822JA	POLYESTER +-5% 1250V 8200P	⚠ AKEI
	(G,H,I,J,K)		

Ref. No.	Part No.	Part Name	Remarks
C556	ECQF2H334JZ	POLYESTER +-5% 200V 0.33	⚠
	OR ECWF2334JBB	POLYESTER +-5% 200V 0.33	⚠ AKEI
	OR VCFSD2D334JB	POLYESTER +-5% 200V 0.33	⚠ AKEI
	OR VCFSG2A334JH	POLYESTER +-5% 200V 0.33	⚠ AKEI
	(A,B,E,F,G,H,I,J,K)		
	ECQF2H394JZA	POLYESTER +-5% 200V 0.39	⚠
	OR ECWF2394JBB	POLYESTER +-5% 200V 0.39	⚠ AKEI
	OR VCFSD2D394JB	POLYESTER +-5% 200V 0.39	⚠ AKEI
	(C,D)		
C558	ECA1VM101B	ELECTROLYTIC 35V 100	
C560	ECEA2EU100	ELECTROLYTIC 250V 10	
C561	ECA2CM2R2B	ELECTROLYTIC 160V 2.2	AKEI
	(A,B,C,D,E,F)		
	ECEA2CGE2R2	ELECTROLYTIC 160V 2.2	
	(G,H,I,J,K)		
C563	ECEA180V33	ELECTROLYTIC 180V 33	
C801	ECKM2H472PE7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKM2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKW2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
C802	ECKM2H472PE7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKM2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKW2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
C803	ECKM2H472PE7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKM2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKW2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
C804	ECKM2H472PE7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKM2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
	OR ECKW2H472PU7	CERAMIC +100%-0% 500V 4700P	⚠
C805	ECES2DU221EG	ELECTROLYTIC 200V 220	⚠
	OR ECET2DR221SW	ELECTROLYTIC 200V 220	⚠
	(A,B,C,D,E,F)		
	ECES2PU471HG	ELECTROLYTIC 180V 470	⚠
	OR ECET2PR471SW	ELECTROLYTIC 180V 470	⚠
	OR EC0S2PP471BB	ELECTROLYTIC 180V 470	⚠ AKEI
	(G,H,I,J,K)		
C806	ECEA2EU100	ELECTROLYTIC 250V 10	
	(A,B,C,D,E,F)		
	ECEA2EU220	ELECTROLYTIC 250V 22	
	(G,H,I,J,K)		
C807	ECKDRS103ZV	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEKD103PZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEMD103PZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSGKD103QZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSGMD103QZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTKG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTMG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUKD103MY	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSUMD103MY	CERAMIC +-20% 125V 0.01	⚠
C810	VCKSFKK332MY	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSFMK332MY	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSFVK332MY	CERAMIC +-20% 125V 3300P	⚠ AKEI
C811	ECKDRS103ZV	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEKD103PZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSEMD103PZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSGKD103QZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSGMD103QZ	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTKG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTMG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUKD103MY	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSUMD103MY	CERAMIC +-20% 125V 0.01	⚠
	(A,B,C,D,E,F)		
	ECKCNS223ZV	CERAMIC +80%-20% 125V 0.022	⚠
	OR ECKDNS223ZV	CERAMIC +80%-20% 125V 0.022	⚠
	(G,H,I,J,K)		
C7001	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
C7002	VCYSARH330J	CERAMIC +-5% 50V 33P	
C7004	ERDS2TJ473	47K	
	(A,B,E,F,G,H)		
C7007	ECQB1H104P9	POLYESTER +100%-0% 50V 0.1	
C7008	ECEA1CU221	ELECTROLYTIC 16V 220	
C7010	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C7013	ECEA1CU100	ELECTROLYTIC 16V 10	
C7018	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C7019	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C7020	VCYSARC103NY	CERAMIC +-30% 16V 0.01	
	(A,B,E,F,G,H,K)		
C7021	VCYSARC103NY	CERAMIC +-30% 16V 0.01	
	(A,B,E,F,G,H,K)		

(E17, E21, E22)

Ref. No.	Part No.	Part Name	Remarks
C7022	VCYSARC103NY	CERAMIC +-30% 16V 0.01	
	(A,B,E,F,G,H,K)		
C7031	VCYSARH330J	CERAMIC +-5% 50V 33P	
C7032	VCYSARH330J	CERAMIC +-5% 50V 33P	
C7041	ECKW1H223ZF5	CERAMIC +80%-20% 50V 0.022	
		COILS	
L501	ELH5L423		⚠
	OR LLH2601T		⚠
	(G,H,K)		
	LLH2602T	HORIZONTAL LINEAR COIL	⚠ AKEI
	(I,J)		
L553	TSC925	FERRITE BEAD CORE FILTER	
L801	ELF18D424F	LINE FILTER 1.4A 5.6M	⚠
	OR LLN63011A	LINE FILTER 1.4A 5.6M	⚠ AKEI
	OR VLQS0154	LINE FILTER 1.4A 5.6M	⚠ AKEI
	OR VLQS0159	LINE FILTER 1.4A 5.6M	⚠ AKEI
	(A,B,C,D,E,F)		
	ELF18D650C	LINE FILTER 1.7A 8.2M	⚠
	OR LLN63021A	LINE FILTER 1.7A 8.2M	⚠ AKEI
	OR VLQS0155	LINE FILTER 1.7A 8.2M	⚠ AKEI
	OR VLQS0158	LINE FILTER 1.7A 8.2M	⚠ AKEI
	(G,H,I,J,K)		
L7001	ELESN100KA	10	
L7002	ELESN101KA	100	
	(C,D,I,J)		
		PIN HEADERS	
PK1	VJSS0871	CONNECTOR RECEPTACLE 13P	AKEI
PK2	VJSS0872	CONNECTOR RECEPTACLE 19P	AKEI
PK3	VJSS0869	CONNECTOR RECEPTACLE 7P	AKEI
P801	VEKS5531	P1002 CONNECTOR CORD W/PLUG	AKEI
		FUSE & PROTECTOR	
F801	VSFS0003A40	FUSE 125V 4A	⚠ AKEI
	OR XBA1C40NU100	FUSE 125V 4A	⚠
		RELAY	
RL801	TSEH0005	RELAY,120V	⚠
	OR TSEH8007	RELAY,120V	⚠ AKEI
	OR TSE1860-1	RELAY,120V	⚠
		TRANSFORMER	
T501	ETH09K6AZ		AKEI
	(A,B,C,D,E,F)		
	ETH19Y70AY		
	(G,H,I,J,K)		
T502	ETE19Z30AY		⚠
T551	KFT2AB137F	FLYBACK TRANSFORMER	⚠ AKEI
	(A,B,C,D,E,F)		
	KFT3AB138F	FLYBACK TRANSFORMER	⚠ AKEI
	(G,H,I,J,K)		
		PRINTED CIRCUIT BOARD ASSEMBLY	
E17	LRP63001Z	CRT C.B.A.	▲ AKEI
	(A,B,C,D,E,F)		
E17	LRP63002A	CRT C.B.A.	▲ AKEI
	(G,H,K)		
E17	LRP63002B	CRT C.B.A.	▲ AKEI
	(I,J)		
		MISCELLANEOUS	
E21	VEQS0609A	TUNER,UHF/VHF NR	
	(A,B,E,F,G,H,K)		
E21	VEQS0597	TUNER,UHF/VHF NR	
	(C,D,I,J)		
E22	LFX6102A	AC CORD W/PLUG	⚠ AKEI
	OR TSX7151-N	AC CORD W/PLUG	⚠ AKEI
	(A,C,E,G,H,I,K)		

(E22, E41, E42, E43, E44, E45, E46, E47, E48, E49, E50, E51)

Ref. No.	Part No.	Part Name	Remarks
E22	LFX6102B	AC CORD W/PLUG	⚠ AKEI
	OR TSX7152-N	AC CORD W/PLUG	⚠ AKEI
	(B,D,F,J)		
E41	TUC76677-1	HEAT SINK PLATE,STEEL	
	(A,B,C,D,E,F)		
E41	TUC77626	HEAT SINK PLATE,STEEL	AKEI
	(G,H,I,J,K)		
E42	TUC77616	GROUNDING PLATE,AL	AKEI
	(A,B,C,D,E,F)		
E42	TUC77603-1	GROUNDING PLATE,AL	AKEI
	(G,H,I,J,K)		
E43	TUC77628	HEAT SINK PLATE,STEEL	AKEI
	(G,H,I,J,K)		
E44	LML69001A	ANODE LEAD CLAMPER	AKEI
E45	TMM76403-1	CLAMPER	
E46	XTV3+10G	TAPPING SCREW,STEEL	
E47	XTW3+10J	TAPPING SCREW,STEEL	
E48	XYN3+F10S	SCREW W/WASHER,STEEL	
E49	XYN3+F6S	SCREW W/WASHER,STEEL	
E51	LFX6601A	FUSE HOLDER	AKEI
		CRT C.B.A.	▲
		(A,B,C,D,E,F)	
		TRANSISTORS	
Q351	2SC1473-QNC		
Q352	2SC1473-QNC		
Q353	2SC1473-QNC		
		RESISTORS	
R351	ERG1ANJP153H	METAL OXIDE 1W 15K	AKEI
R352	ERG1ANJP153H	METAL OXIDE 1W 15K	AKEI
R353	ERG1ANJP153H	METAL OXIDE 1W 15K	AKEI
R354	ERD25TJ272	2.7K	
R357	ERDS2TJ392	3.9K	
R358	ERDS2TJ392	3.9K	
R359	ERDS2TJ392	3.9K	
R360	ERDS2TJ391	390	
R361	ERDS2TJ391	390	
R362	ERDS2TJ391	390	
R363	ERDS2TJ181	180	
R364	ERDS2TJ181	180	
R365	ERDS2TJ181	180	
R366	ERD25TJ272	2.7K	
R367	ERD25TJ272	2.7K	
		CAPACITORS	
C351	VCYSARH391KB	CERAMIC 50V 390P	
C352	VCYSARH391KB	CERAMIC 50V 390P	
C353	VCYSARH471KB	CERAMIC 50V 470P	
C354	ECKC3D102KB	CERAMIC 2KV 1000P	
		PIN HEADERS	
P354	TEL302-5X	CHECK TERMINAL	
P355	TJS1A5081	CRT SOCKET	
		MISCELLANEOUS	
E50	TMM77412	CLAMPER	AKEI
		CRT C.B.A.	▲
		(G,H,I,J,K)	
		TRANSISTORS	
Q351	2SC3063		AKEI
Q352	2SC3063		AKEI
Q353	2SC3063		AKEI

Ref. No.	Part No.	Part Name	Remarks
		RESISTORS	
R351	ERG2ANJ153H	METAL OXIDE 2W 15K	
R352	ERG2ANJ153H	METAL OXIDE 2W 15K	
R353	ERG2ANJ153H	METAL OXIDE 2W 15K	
R354	ERD25TJ272	2.7K	
R355	ERD25TJ272	2.7K	
	(G,H,K)		
R356	ERD25TJ272	2.7K	
	(G,H,K)		
R357	ERDS2TJ392	3.9K	
R358	ERDS2TJ392	3.9K	
R359	ERDS2TJ392	3.9K	
R360	ERDS2TJ391	390	
R361	ERDS2TJ391	390	
R362	ERDS2TJ391	390	
R363	ERDS2TJ121	120	
R364	ERDS2TJ121	120	
R365	ERDS2TJ121	120	
R366	ERD25TJ272	2.7K	
	(I,J)		
R367	ERD25TJ272	2.7K	
	(I,J)		
		CAPACITORS	
C351	VCYSARH471KB	CERAMIC 50V 470P	
C352	VCYSARH471KB	CERAMIC 50V 470P	
C353	VCYSARH561KB	CERAMIC 50V 560P	
C354	ECKC3D102KB	CERAMIC 2KV 1000P	
		PIN HEADERS	
P353	LJP25004A	CRT SOCKET	AKEI
	(G,H,K)		
P354	TEL302-5X	CHECK TERMINAL	
P355	TJS1A5081	CRT SOCKET	
	(I,J)		
		MISCELLANEOUS	
E50	TMM77412	CLAMPER	AKEI
		ELECTRICAL PARTS LOCATED ON CHASSIS	
IC2501	AN3845SC	IC, LINEAR CAP./LOADING DRIVE	

Ref. No.	Part No.	Part Name	Remarks
		SUMMARY OF "E" ITEM NUMBERS REFER TO ELECTRICAL PARTS LIST FOR MODEL INFORMATION	
E1	VEPS3055F	MAIN C.B.A.	
E1	VEPS3058B	MAIN C.B.A.	
E1	VEPS3055D	MAIN C.B.A.	
E1	VEPS3055E	MAIN C.B.A.	
E1	VEPS3055G	MAIN C.B.A.	
E1	VEPS3055B	MAIN C.B.A.	
E1	VEPS3058A	MAIN C.B.A.	
E1	VEPS3055A	MAIN C.B.A.	
E2	VEPS4022A	TV STEREO C.B.A.	
E6	VEPS5012Z1	HEAD AMP C.B.A.	
E6	VEPS5011Z1	HEAD AMP C.B.A.	
E7	VEPS0A25A	JUNCTION C.B.A.	
E11	VEPS4014D	STEREO AMP C.B.A.	
E16	LRM61006Z	TV MAIN C.B.A.	
E16	LRM61006W	TV MAIN C.B.A.	
E16	LRM61006X	TV MAIN C.B.A.	
E16	LRM61006Y	TV MAIN C.B.A.	
E16	LRM61006C	TV MAIN C.B.A.	
E16	LRM61006D	TV MAIN C.B.A.	
E16	LRM61006E	TV MAIN C.B.A.	
E16	LRM61006A	TV MAIN C.B.A.	
E17	LRP63001Z	CRT C.B.A.	
E17	LRP63002A	CRT C.B.A.	
E17	LRP63002B	CRT C.B.A.	
E21	VEQS0609A	TUNER,UHF/VHF NR	
E21	VEQS0597	TUNER,UHF/VHF NR	
E22	LFX6102A	AC CORD W/PLUG	⚠
E22	TSX7151-N	AC CORD W/PLUG	⚠
E22	LFX6102B	AC CORD W/PLUG	⚠
E22	TSX7152-N	AC CORD W/PLUG	⚠
E23	EYF52BC	FUSE HOLDER	
E24	LMH69003A	LED HOLDER	
E24	LMH69002A	LED HOLDER	
E27	GP1U292Q	INFRARED RECEIVER UNIT	
E27	PNA4617M00HC	INFRARED RECEIVER UNIT	
E30	VMTS0035	CUSHION,RUBBER	
E32	VMDS0038	LED SPACER	
E33	VMXS0583	LED SPACER	
E39	VMAS1912	P.C.B. SUPPORT ANGLE	
E40	VMXS0876	P.C.B. SPACER A	
E41	TUC76677-1	HEAT SINK PLATE,STEEL	
E41	TUC77626	HEAT SINK PLATE,STEEL	
E42	TUC77616	GROUNDING PLATE,AL	
E42	TUC77603-1	GROUNDING PLATE,AL	
E43	TUC77628	HEAT SINK PLATE,STEEL	
E44	LML69001A	ANODE LEAD CLAMPER	
E45	TMM76403-1	CLAMPER	
E46	XTV3+10G	TAPPING SCREW,STEEL	
E47	XTW3+10J	TAPPING SCREW,STEEL	
E48	XYN3+F10S	SCREW W/WASHER,STEEL	
E49	XYN3+F6S	SCREW W/WASHER,STEEL	
E50	TMM77412	CLAMPER	
E51	LFX6601A	FUSE HOLDER	

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